

88065012

aeromet

MONTHLY PROGRESS REPORT NO. 9
for the period November 1-30, 1976
to
ENVIRONMENTAL PROTECTION AGENCY
REGION VIII

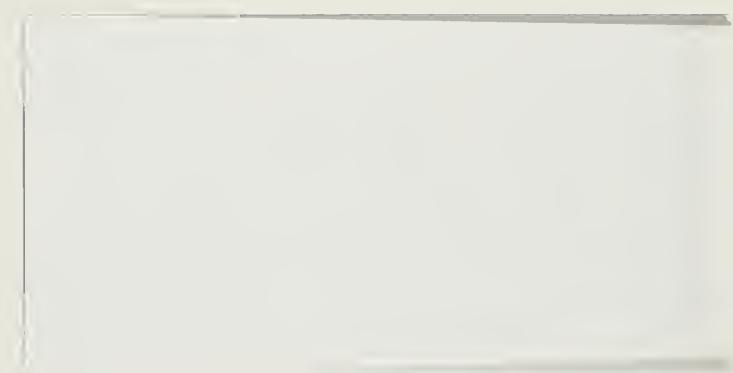
C-b

aeromet inc.

P.O. BOX FF NORMAN, OKLAHOMA 73070
405 329-2424

TM
377-
168
10758
W.D.P.

7700256



2100-5212

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

TN
851
669
C3758
No. 9

MONTHLY PROGRESS REPORT NO. 9
for the period November 1-30, 1976
to
ENVIRONMENTAL PROTECTION AGENCY
REGION VIII

1860 Lincoln St., Suite 900
Denver, CO 80203

Contract No. 68-01-1946

by

Aeromet, Inc.
Box FF
Norman, OK 73070

Colorado C-b Tract

1.0 INTRODUCTION

Low level temperature and wind data were collected for November, 1976 at Casper, Wyoming; the Shell Oil Co. Colorado C-b Tract 25 miles west of Rio Blanco, Colorado; Craig, Colorado; Escalante and Hanksville, Utah; Rock Springs, Wyoming; and the U-a/U-b Tract 5 miles south of Bonanza, Utah. The data collection was made using a 30 gm helium filled pilot balloon with a temperature sonde attached, a single theodolite and a TSR-2 receiver/recorder twice a day every other day. The observations were made $\frac{1}{2}$ hour after sunrise and 1400L.

The pilot balloon had an ascent rate of 500 ft/min and it was tracked by a single theodolite for 12 minutes with the azimuth and elevation angles recorded every 30 seconds on a cassette tape recorder. The tape was transcribed to a pilot balloon form after the observation.

The temperature sonde operated at 403 MHz and the signal was received by a ground plane antenna at least 24 ft. AGL which was attached to the Aeromet, Inc. TSR-2 receiver/recorder. The TSR-2 receiver has a built-in Rustrak strip chart recorder and the temperature was recorded within the range from -50°C to +50°C. A baseline temperature calibration was performed with each T-Sonde by the adjustment of the recorded temperature to match the thermometer measured temperature next to the transmitting sonde. Once the calibration check was finished the balloon was released with the sonde attached and the temperature was recorded for at least 20 minutes. At the completion of each observation the data were mailed to Aeromet, Inc.

The Monthly Progress Report is divided into seven parts, one corresponding to each of the seven field sites. The collected temperature and wind data are accurate and have not been edited unless otherwise stated in the Pilot Balloon Summary section. However, the obvious errors sometimes found in the recorded azimuth and elevation angles are corrected without mention. For example, the sequence of azimuth angles . . . 76.6, 75.3, 47.8, 73.8 . . . can be corrected without ambiguity. The more ambiguous errors are brought to the attention of the reader if editing has been performed, otherwise, the data are left as recorded and the filtering is left to the individual user. An example is the wind profile for Hanksville on 06/29/76 at 1300 MST found in the Monthly Progress Report No. 4. The azimuth angles starting 30 seconds after the launch and incremented by the same are as follows . . . 109.0, 110.0, 110.0, 281.0, 280.0, 282.0 . . . , while the corresponding elevation angles are as follows, . . . 60.0, 57.6, 58.7, 58.6, 52.7, 44.3 The wind speed and direction change dramatically over the interval as can be seen in the report since these data were not edited.

2.0 DATA SUMMARY

2.1 Colorado C-b Tract Field Summary

The data collection for the month of November is much improved over October's record. Negotiations were started with the C-b Shale Oil Project, the Environmental Protection Agency and Aeromet, Inc. to increase the data collection percentage and maintain good working relationships with all involved. The C-b Tract was no longer operational on the weekends, thus making it unfeasible and too costly to have the observer drive 100 miles round trip to make the balloon observations. It was concluded that the Saturday scheduled launch would be done on Friday and the Sunday scheduled launch would be done on Monday.

The observer attempted 78% of the scheduled pilot balloon launches resulting in 78% recovery of the temperature data and 72% recovery of the wind data. A 3% loss in wind data resulted from equipment malfunctions and a 3% loss is contributed to poor weather conditions.

2.2 Mixing Layer Height

The average mixing layer height was computed for the morning and afternoon based on the morning and 1400L temperature soundings. The balloon release $\frac{1}{2}$ hour after sunrise is near enough to the minimum temperature to assume the correctness of the calculated mixing layer heights. The afternoon balloon release is generally not at the time of maximum heating and the user of the mixing layer height data must be aware that minor changes in the calculated values can be expected. Without equipping the field sites with minimum/maximum thermometers the extrapolation of the afternoon data can not be justified in establishing a data base for statistical analysis. The approximation of the afternoon maximum temperature would be a "calculated guess" for there are: 1) local effects which are to be determined and would be filtered out with extrapolation, 2) mountain effects which alter the lower 1500m (e.g. downslope effects), and 3) meteorological effects which can alter the expected change in the sounding (e.g. advection, moisture, etc.).

It is felt that to better define the mixing layer height that a variety of "heat island" effects should be viewed. The rigorous method would be to define 15 "heat island" effects ranging from 0 to 14°C and let the user decide which would best serve his needs. However, for these analysis 0°, +5° and +10° "heat island" effects are calculated and listed for the morning and afternoon soundings in the table Average Mixing Layer Height.

The symbol N/D means that no mixing layer height was defined and sfc is the abbreviation for surface.

2.3 Stability and Inversion Classification

The temperature and wind data were edited to remove data felt to cause anomalous results in the stability and inversion classification schemes. Only the stations listed prior to the table classifying the inversions were used in the calculations.

3.0 DATA PROCESSING

3.1 Printed and Plotted Output

Wind speeds and directions are computed from the azimuth and elevation angles measured while tracking the balloon with the theodolite. The wind speed and direction are plotted versus height and printed out at 30 second intervals. The printed output includes the AGL and MSL height of the calculated wind value and the orthogonal components of the wind. The wind profile is also punched on computer cards at 30 second intervals.

The temperature data are processed and plotted with the temperature and the lapse rate per 300 meters versus height at 15 second intervals. Tic marks are placed on the temperature plot at significant levels. A solid line to the right side of the plot indicates the data for that layer are interpolated temperature values. The temperature data are also printed out and punched on cards. The asterisk beside a height value indicates a significant level while a "?" indicates interpolated data.

The temperature data are also processed to produce for each site a monthly summary of inversion layers and lapse rates within the inversions and from the inversion base to the surface by means of the Holzworth classification scheme for inversions (Holzworth, G.C., 1974: "Climatological Data on Atmospheric Stability in the United States" Paper presented at the American Meteorological Society Symposium on Atmospheric Diffusion and Air Pollution, September 9-13, 1974. Santa Barbara, California.)

The temperature and wind data are processed together to produce for each site a monthly average bivariate frequency distribution of wind direction versus wind speed represented in the 500m layer adjacent to the ground. The distribution is presented by the six Pasquill stability classes (A-F) and a summary independent of stability. If the $\Delta T/100m$ criterion is met but the wind speed criterion is not met, then the

STABILITY CLASS	ΔT ($^{\circ}\text{C}/100\text{m}$)	WIND SPEED
A	<-1.9	≤ 2
B	-1.9 - -1.7	≤ 5
C	-1.7 - -1.5	≤ 6
D	-1.5 - -0.5	ALL SPEEDS
E	-0.5 - 1.5	≤ 5
F	>1.5	≤ 3

wind data are checked against the criterion for the next stability class, always cascading to the D stability class. Once the wind speed criterion is met the data are classified under the new stability class even though now the lapse rate exceeds the class criterion. For example,

if the $\Delta T/100m$ value is 1.7 and the wind speed is 7 m/s, the lapse rate criterion is met for the stability class F, however the wind speed criterion is exceeded. The wind speed is greater than the 5 m/s maximum limit for class E but falls within the criterion of class D, which includes all wind speeds. As a result the observational data with a ΔT value of $1.7^{\circ}\text{C}/100 \text{ m}$ and a wind speed value of 7 m/s are classified under stability class D, not class F.

The data are also punched on computer cards in a format compatible with the STAR PROGRAM of the National Climatic Center, NOAA, U.S. Department of Commerce.

3.2 Punched Output

The punched temperature and wind data for each observation are categorized into four groups, each separated by a blank card. The first group begins with a header card listing the station name (3A4), the station elevation in meters (I4), the month, date and year (I6), the observation time (I4), the time zone (A3), the balloon ascent rate in feet per minute (I3), the sampling interval in seconds (I2), the temperature error in °C (F5.1), the T-Sonde I.D. number (I5) and the surface wind speed in kts and direction (2F6.1). A surface wind speed of 180.0 KTS indicates missing surface wind data. The series of cards prior to the first blank card include on each card the elapse time in minutes (2X,F5.1), the height of the balloon in meters AGL (4X,F5.0), the height of the balloon in meters MSL (4X,F5.0), the temperature in °C (4X,F6.2), the change in temperature between standard or significant levels (2X,F6.2), the lapse rate per 300m (2X,F6.2), the difference in the lapse rate per 300m and the dry adiabatic lapse rate per 300m (2X,F6.2), the wind speed in m/s if known (4X,F5.1), and the wind direction if known (3X,F5.0). The cards following the first blank card include on each card the elapse time in minutes (2X,F5.1), the height in meters AGL (4X,F5.0), the height in meters MSL (4X,F5.0), the u-component of the wind in m/s (4X,F6.1), the v-component of the wind in m/s (6X,F6.1), the wind speed in m/s (7X,F5.1), the wind direction (6X,F5.0), the elevation angle in degrees (F5.1) and the azimuth angle in degrees (F5.1). The cards after the second blank card include a header card like before and a series of cards with four groups of the following on each card; the height in meters AGL (F6.1), the temperature in °C (F6.2), the lapse rate °C/300m (F6.2) and a blank space (1X). The cards after the third blank card include a header card the same as described earlier, eight cards with the original digitized temperature data and a flag to indicate interpolated data (20(F3.1,I1)), five cards with the elevation angle in degrees (16F5.1), and five cards with the azimuth angle in degrees (16F5.1). The temperature data are in degrees Celsius and have 50°C added to each value. An elevation angle of 180° indicates a missing azimuth and elevation angle value.

The punched output from the bivariate frequency distribution calculations include a header card as illustrated below,

SECO TO 40,000 METERS
WIDE BAND PASS FILTERS

and the punched distribution data for each wind direction under each stability class in agreement with the "star" output. The stability classes are number coded as follows:

STABILITY CLASS	NUMBER CODE
A	1
B	2
C	3
D	4
E	5
F	6
Independent of Stability	7

The station I.D. numbers are as follows:

STATION	I.D. NUMBER
Casper, Wyoming	1
Colorado C-b Tract	2
Craig, Colorado	3
Escalante, Utah	4
Hanksville, Utah	5
Rock Springs, Wyoming	6
Utah U-a/U-b Tract	7

The month and season number codes are as follows:

MONTH	1-12
SEASON	13 = DJF
	14 = MAM
	15 = JJA
	16 = SON
ANNUAL	17

PILOT BALLOON SUMMARY
Colorado C-b Tract
November , 1976

November 1	0800	AFTN	No data were collected.
November 2	0800	MORN } AFTN }	No data were collected.
November 4	0800	AFTN	No data were collected.
November 5	0800	AFTN	No data were collected.
November 8	0800	AFTN	Balloon was lost in the clouds after 8 minutes.
	1430		Temperature values were interpolated over the interval from 1 3/4 to 8 3/4 minutes.
November 10	0715		
	1400		Balloon was lost in the clouds after 8 1/2 minutes.
November 12	0815		Temperature values were interpolated over the interval from 8 1/2 to 10 1/2 minutes.
	1350		Temperature values were interpolated over the interval from 10 1/2 to 12 1/2 minutes.

PILOT BALLOON SUMMARY
Colorado C-b Tract
November, 1976

November 15	0830	
	1430	
November 16	0830	Rapid increase in wind speed due to large decreases in elevation angles.
	1450	
November 18	0830	
	1240	
November 19	0730	
	1230	
November 22	0720	
	1345	
November 24	0830	Tape did not record first 4 minutes of azimuth and elevation readings.
	1430	
November 26	MORN	No data were collected.
	AFTN	No data were collected.
November 29	0825	No wind data were collected due to snow.
	1430	
November 30	0830	
	1330	No wind data as tape recorder gave out.

AVERAGE MIXING LAYER HEIGHT

Colorado C-b Tract

November, 1976

HEIGHT IN METERS

DATE	MORNING			AFTERNOON		
	0°	+5°	+10°	0°	+5°	+10°
1	sfc	750m	1800m			
2						
4	sfc	600m	1450m			
5	sfc	300m	900m			
8	sfc	800m	2000m	100m	1350m	2200m
10	50m	1100m	3150m	50m	1500m	3300m
12	50m	350m	550m	550m	650m	1250m
14						
15	50m	1150m	1750m	700m	1750m	2900m
16	sfc	2050m	2650m	1650m	2750m	3250m
18	sfc	250m	1250m	750m	2400m	N/D
19	sfc	350m	1000m	1000m	2750m	N/D
22	sfc	600m	3150m	200m	3800m	N/D
24	sfc	900m	3050m	1750m	N/D	N/D
26						
29	300m	1300m	1550m	1650m	2500m	N/D
30	550m	1600m	N/D	900m	2300m	N/D

CLOUD COVER AND SIGNIFICANT WEATHER

Colorado C-b Tract

November, 1976

<u>DATE</u>	<u>MORNING</u>	<u>AFTERNOON</u>
1	clear	
2		
4	clear	
5	clear	
8	overcast, snow N	overcast, haze
10	scattered	overcast, rain N
12	broken	overcast
15	scattered	clear
16	scattered	clear
18	scattered	broken
19	clear	clear
22	overcast	clear
24	clear	clear
26		
29	overcast, snow	scattered
30	overcast	scattered

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3157

ATE 11/01/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	114.	0.58	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3158

ATE 11/04/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	305.	0.28	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3155

ATE 11/05/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	114.	1.82	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3152

ATE 11/08/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	38.	0.24	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3154

ATE 11/08/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
76.	114.	0.0	-0.84

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3153

ATE 11/10/76 TIME 07:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
58.	152.	0.09	-0.50



COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3160

DATE 11/10/76 TIME 14:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	38.	0.0	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3149

DATE 11/12/76 TIME 08:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
38.	762.	0.98	-1.55

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3147

DATE 11/12/76 TIME 13:50MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	38.	0.50	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3148

DATE 11/15/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
38.	191.	0.25	-0.76

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3152

DATE 11/15/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	38.	0.0	0.0

COL CB TRACT ELEV 2042 METERS SUOUNDING ID 3150

DATE 11/16/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
76.	114.	0.0	-0.26



CUL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3145

DATE 11/16/76 TIME 14:50MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1000 FT OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-4.12
100.	250.	-0.74
250.	500.	-0.88
500.	750.	-0.98
750.	1000.	-0.98
1000.	1500.	-1.01

CUL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3146

DATE 11/18/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	267.	1.06	0.0

CUL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3143

DATE 11/18/76 TIME 12:40MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
174.	220.	0.19	-1.37

CUL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3142

DATE 11/19/76 TIME 07:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	229.	0.87	0.0

CUL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3143

DATE 11/19/76 TIME 12:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
846.	884.	0.0	-1.09

CUL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3144

DATE 11/22/76 TIME 07:20MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	267.	0.40	0.0

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 3140

DATE 11/22/76 TIME 13:45MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
114.	152.	0.50	-1.07

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 3156

DATE 11/24/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
0.	229.	0.21	0.0

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 3158

DATE 11/24/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

THERE ARE NO INVERSION BASES WITHIN 1500M OF THE SFC

LAYER BASE METERS AGL	LAYER TOP METERS AGL	DT/DZ (DEG C)/100M
0.	100.	-1.96
100.	250.	-0.81
250.	500.	-1.00
500.	750.	-1.03
750.	1000.	-0.96
1000.	1500.	-1.00

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 3157

DATE 11/29/76 TIME 08:25MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
333.	485.	0.26	-0.98

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 2867

DATE 11/29/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
952.	1028.	0.13	-1.05

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 2865

DATE 11/30/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
76.	201.	0.15	-2.78

***** CUL CB TRACT ELEV 2042 METERS SOUNDING ID 2863

DATE 11/30/76 TIME 13:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

INV BASE METERS AGL	INV TOP METERS AGL	INV DT/DZ (DEG C)/100M	DT/DZ BELOW INV (DEG C)/100M
932.	1008.	1.02	-1.03

MONTH: NOVEMBER YEAR: 1970. COL CB TRACT ELEV 2042 METERS
 HOLZWORTH CLASSIFICATION SCHEME FOR INVERSIONS
 MODIFIED TO SHOW TOTAL NUMBER INSTEAD OF PERCENT

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (M)	TOTAL
100	100	101- 250	11
101 - 250	4	251- 500	0
251 - 500	3	501- 750	0
501 - 750	5	751- 1000	0
751 - 1000	0	1000- 1500	0
1001 - 1500	0	1501- 2000	0
> 1500	0	2001- 2500	0
INV TOTAL	1	2501-	3000
DT/DZ	5		
FROM INV	4		
BASE	3		
TO	2		
SFC	1		
NU INV TOT	2		
DT/DZ FUR	5		
SAME	4		
LAYERS	3		
AS INV	2		
BASE	1		

MONTH: NOVEMBER YEAR: 1976. COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	0-3	4-6	7-10	SPEED (METER/SEC) 11-16 17-21 GREATER THAN 21	AVERAGE SPEED	TOTAL
NNE	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0
W	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE A STABILITY CLASS IS 0.0

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE
SUM OF TEMP AND WIND DATA



MONTH: NOVEMBER YEAR: 1970. COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	0-3	4-6	7-10	SPEED (METER/SEC)	11-16	17-21	GREATER THAN 21	AVERAGE SPEED	TOTAL
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Avg SPEED	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE B STABILITY CLASS IS 0.0
RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 25 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE
SOUNDING TEMP AND WIND DATA



MONTH: NOVEMBER YEAR: 1976. COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	0-3	4-6	7-10	SPEED (METER/SEC)	GREATER THAN 21	AVERAGE SPEED	TOTAL
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVG SPEED	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE C STABILITY CLASS IS 0.0
RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE
500 M OF TEMP AND WIND DATA



MONTH: NOVEMBER YEAR: 1976. COL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	0-3	4-6	7-10	11-16	17-21	GREATER THAN 21	AVERAGE SPEED	TOTAL
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.08
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.06
SE	0.08	0.0	0.0	0.0	0.0	0.0	0.4	0.08
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVG SPEED	1.5	4.2	8.5	0.0	0.0	0.0	0.0	0.0
TOTAL	0.15	0.77	0.08	0.0	0.0	0.0	0.0	1.00

RELATIVE FREQUENCY OF OCCURRENCE OF THE STABILITY CLASS IS 0.59

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA



MONTH: NOVEMBER YEAR: 1976. CUL. CB. TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	0-3	4-6	7-10	SPEED (METER/SEC)	11-16	17-21	GREATER THAN 21	AVERAGE SPEED	TOTAL
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.22	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.35
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.11
SE	0.0	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.11
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WN	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVG SPEED	1.1	3.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.56	0.44	0.0	0.0	0.0	0.0	0.0	0.0	1.00

RELATIVE FREQUENCY OF OCCURRENCE OF THE E STABILITY CLASS IS 0.41

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE 500 M TEMP AND WIND DATA



MONTH: NOVEMBER YEAR: 1976. COL CB TRACT SFC 10 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	0-3	4-6	7-10	SPEED (METER/SEC)	11-16	17-21	GREATER THAN 21	AVERAGE SPEED	TOTAL
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
E	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SS	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVG SPEED	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TOTAL	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RELATIVE FREQUENCY OF OCCURRENCE OF THE F STABILITY CLASS IS 0.0

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE 500 M OF TEMP AND WIND DATA



MONTH: NOVEMBER YEAR: 1976. CUL CB TRACT SFC TO 500 METERS

NORMALIZED FREQUENCY DISTRIBUTION

DIRECTION	SPEED (METER/SEC)			GREATERTHAN 21 SPEED	AVERAGE SPEED	TOTAL
	0-3	4-6	7-10			
N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.09	0.09	0.09	0.09	0.09	0.09
NE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.05	0.09	0.09	0.09	0.09	0.09
SSE	0.05	0.05	0.05	0.05	0.05	0.05
S	0.09	0.09	0.09	0.09	0.09	0.09
SSW	0.09	0.18	0.09	0.09	0.09	0.09
SW	0.0	0.0	0.05	0.05	0.05	0.05
WSW	0.09	0.09	0.09	0.09	0.09	0.09
WW	0.0	0.0	0.0	0.0	0.0	0.0
NNW	0.0	0.0	0.09	0.09	0.09	0.09
NN	0.0	0.0	0.0	0.0	0.0	0.0
NNN	0.0	0.14	0.0	0.0	0.0	0.14
Avg SPEED	1.2	4.0	8.3	0.0	0.0	0.0
TOTAL	0.32	0.04	0.05	0.0	0.0	1.00

NORMALIZED FREQUENCY DISTRIBUTION INDEPENDENT OF STABILITY

RELATIVE FREQUENCY OF CALM 0.0

A TOTAL OF 3 SOUNDINGS FROM A SAMPLE OF 25 SOUNDINGS DID NOT HAVE
SOON TEMP AND WIND DATA

COL CB TRACT

ELEV 2042 METERS

SUOUNDING ID 3157

DATE 11/01/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		4.92		0.0		0.0	0.
1.0	150	2192	5.49	0.57	-0.19	2.74	1.7	315.
2.0	300	2342	4.92	-0.57	-1.30	1.63	0.3	356.
3.0	458.	2500.	4.45	-0.28	-2.24	0.69	3.3	98.
3.3	500	2542.	4.46	-0.18	-2.24	0.69	1.9	75.
6.3	958.	3000.	1.60	-2.85	-2.07	0.86	2.8	48.
12.8	1958.	4000.	-3.31	-4.92	-1.34	1.59	2.7	344.
19.4	2958.	5000.	-3.21	0.10	-0.38	2.55		

COL CB TRACT

ELEV 2042 METERS

SUOUNDING ID 3157

DATE 11/01/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0.
0.5	76	2118	2.1	-2.7	3.4	323.
1.0	152	2194	1.2	-1.1	1.6	314.
1.5	229	2271	0.1	-1.1	1.1	355.
2.0	305	2347	0.0	-0.3	0.3	556.
2.5	381	2423	-2.3	-0.5	2.3	77.
3.0	457	2499	-3.3	0.5	3.3	99.
3.5	533	2575	-0.7	-0.5	0.8	56.
4.0	610	2652	-1.9	-0.4	1.9	79.
4.5	686	2728	-1.8	-1.0	2.1	62.
5.0	762	2804	-1.3	-1.5	2.0	41.
5.5	838	2880	-1.9	-1.9	2.7	45.
6.0	914	2956	-1.6	-1.2	2.0	52.
6.5	991	3033	-2.3	-2.4	3.3	45.
7.0	1067	3109	-1.7	-1.3	2.1	55.
7.5	1143	3185	-2.0	-1.1	2.3	62.
8.0	1219	3261	-1.7	0.0	1.7	90.
8.5	1295	3337	-1.8	0.0	1.8	91.
9.0	1372	3414	-1.4	-0.7	1.6	63.
9.5	1448	3490	-1.3	-1.0	1.7	51.
10.0	1529	3571	-1.6	-1.6	2.3	45.
10.5	1605	3647	-1.2	-1.6	2.1	37.
11.0	1682	3724	-1.0	-1.6	1.9	32.
11.5	1758	3800	-0.6	-1.8	1.9	19.
12.0	1834	3876	-0.3	-2.1	2.1	9.
12.5	1910	3952	1.3	-3.3	3.6	339.
13.0	1986	4028	0.5	-2.1	2.2	347.
13.5	2063	4105	0.8	-2.3	2.4	340.
14.0	2139	4181	3.3	-3.1	4.5	313.



COL CB TRACT

ELEV 2042 METERS

SUUNNING ID 3158

TE 11/04/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		3.98		0.0		0.0	0.
1.0	150	2192	4.83	0.85	-0.19	2.74	1.3	348.
2.0	300	2342	4.83	0.00	-0.37	2.56	1.2	23.
3.0	458.	2500.	3.50	-1.30	-1.68	1.25	1.2	47.
3.3	500	2542	3.50	-0.03	-1.68	1.25	1.3	40.
6.3	958.	3000.	1.69	-1.80	-1.88	1.05	1.0	86.
12.8	1958.	4000.	-1.09	-2.78	-2.65	0.27	1.7	57.
19.4	2958.	5000.	-3.99	-2.91	-1.91	1.01		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3158

TE 11/04/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	-0.1	-1.1	1.1	3.
1.0	152.	2194.	0.0	-1.3	1.3	360.
1.5	229.	2271.	-0.6	-1.5	1.6	23.
2.0	305.	2347.	-0.4	-1.1	1.2	23.
2.5	381.	2423.	-0.5	-1.2	1.3	22.
3.0	457.	2499.	-0.9	-0.8	1.2	47.
3.5	533.	2575.	-0.8	-1.1	1.4	34.
4.0	610.	2652.	-1.4	-1.7	2.2	39.
4.5	686.	2728.	-1.4	-1.6	2.1	42.
5.0	762.	2804.	-0.9	-1.1	1.4	38.
5.5	838.	2880.	-1.3	-0.8	1.5	57.
6.0	914.	2956.	-0.8	-0.3	0.8	71.
6.5	991.	3033.	-1.0	0.1	1.0	98.
7.0	1067.	3109.	-0.4	0.1	0.4	99.
7.5	1143.	3185.	-1.2	-0.7	1.4	58.
8.0	1219.	3261.	-0.2	-0.1	0.3	72.
8.5	1295.	3337.	-0.6	-0.8	1.0	35.
9.0	1372.	3414.	-1.9	-3.0	3.6	32.
9.5	1448.	3490.	-0.3	-1.6	1.6	10.
10.0	1524.	3566.	-2.1	-0.1	2.1	87.
10.5	1600.	3642.	-1.3	-0.8	1.5	58.
11.0	1676.	3718.	-1.5	-0.7	1.7	66.
11.5	1753.	3795.	-1.5	-0.7	1.6	63.
12.0	1829.	3871.	-1.2	-0.7	1.4	61.
12.5	1905.	3947.	-1.4	-1.0	1.8	55.
13.0	1981.	4023.	-1.4	-0.9	1.6	58.
13.5	2057.	4099.	-1.2	-0.8	1.5	57.

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3155

DATE 11/05/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
0.8	SFC		3.41		0.0		0.0	0.
1.0	* 114	2156	5.49		0.93	3.86		
1.0	150	2192	5.40	1.99	-0.37	2.56	1.0	257.
2.0	300	2342	5.11	-0.29	0.37	3.30	0.5	172.
3.0	458.	2500.	5.02	-0.26	0.19	3.11	0.7	322.
3.3	500	2542	5.01	0.16	0.19	3.11	0.8	297.
6.3	958.	3000.	4.45	-0.56	-0.19	2.74	3.0	358.
12.8	1958.	4000.	0.65	-3.80	-1.89	1.04		
19.4	2958.	5000.	0.35	-0.29	-0.19	2.74		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3155

DATE 11/05/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	1.2	-0.4	1.3	288.
1.0	152.	2194.	1.0	0.2	1.0	256.
1.5	229.	2271.	0.5	0.5	0.7	226.
2.0	305.	2347.	-0.1	0.5	0.5	168.
2.5	381.	2423.	1.0	0.1	1.0	266.
3.0	457.	2499.	0.5	-0.6	0.7	322.
3.5	533.	2575.	0.9	-0.1	0.9	278.
4.0	610.	2652.	1.2	-0.6	1.4	295.
4.5	686.	2728.	-0.0	-2.0	2.0	0.
5.0	762.	2804.	-2.3	-3.0	3.8	37.
5.5	838.	2880.	-0.0	-2.4	2.4	0.
6.0	914.	2956.	0.0	-2.5	2.5	359.
6.5	991.	3033.	0.2	-3.3	3.3	357.
7.0	1067.	3109.	-0.2	-2.6	2.6	5.
7.5	1143.	3185.	-0.6	-2.0	2.1	16.
8.0	1219.	3261.	-1.0	-1.9	2.2	28.
8.5	1295.	3337.	-0.9	-2.5	2.7	20.
9.0	1372.	3414.	-2.0	-0.8	2.1	68.
9.5	1448.	3490.	-1.0	-1.0	1.5	46.
10.0	1524.	3566.	-1.0	-0.6	1.0	58.
10.5	1600.	3642.	-2.1	0.0	2.1	91.
11.0	1676.	3718.	-1.8	0.0	1.8	91.
11.5	1753.	3795.	-2.5	0.5	2.6	102.
12.0	1829.	3871.	-1.2	0.2	1.2	98.
12.5	1905.	3947.	-1.9	0.2	2.0	95.



COL CB TRACT

ELEV 2042 METERS

SUOUNDING ID 3152

DATE 11/08/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		8.30		0.0		0.0	0
1.0	150	2192	8.02	-0.28	-1.10	1.83	4.1	95
2.0	300	2342	7.27	-0.75	-1.10	1.82	4.8	105
3.0	458	2500	6.05	-0.85	-1.11	1.82	4.0	121
3.3	500	2542	6.08	-0.35	-1.11	1.82	4.0	115
6.3	958	3000	4.36	-1.72	-1.49	1.44	6.0	177
12.8	1958	4000	-1.38	-5.73	-0.76	2.17		
19.4	2958	5000	-5.65	-4.27	-1.15	1.78		

COL CB TRACT

ELEV 2042 METERS

SUOUNDING ID 3152

DATE 11/08/76 TIME 08:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0
0.5	76	2118	-3.0	-0.2	3.0	86
1.0	152	2194	-4.1	0.4	4.1	95
1.5	226	2271	-5.2	1.2	5.3	103
2.0	305	2347	-4.6	1.2	4.7	105
2.5	381	2423	-4.6	2.1	5.0	115
3.0	457	2499	-3.5	2.1	4.0	121
3.5	533	2575	-3.7	1.4	4.0	111
4.0	610	2652	-3.0	1.0	3.0	108
4.5	686	2728	-2.1	1.3	2.5	122
5.0	762	2804	-1.1	2.2	2.5	153
5.5	838	2880	-0.4	3.7	3.8	174
6.0	914	2956	-0.7	5.7	5.8	187
6.5	991	3033	-1.1	6.0	6.1	169
7.0	1067	3109	-2.2	9.3	9.5	193
7.5	1143	3185	-0.9	6.7	6.8	188
8.0	1219	3261	-1.2	6.3	6.4	191
8.5	1295	3337	2.2	9.1	9.4	194



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3154

TIME 11/08/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
1.0	SFC		12.55		0.0		0.0	0
1.0	150	2192	11.73	-0.82	-1.81	1.12	6.3	247
2.0	?	2342	10.44	-1.29	-1.82	1.11	10.1	251
3.0	458	72500	9.52	-0.92	-1.64	1.28	8.9	226
3.3	?	72542	9.34	-0.19	-1.64	1.28	9.4	222
6.3	500	73000	6.34	-2.99	-2.03	0.89	8.8	217
12.8	958	73000	1.02	-5.32	-0.38	2.55		
19.4	1958	80000	-3.31	-4.34	-2.29	0.64		
25.7	2958	5000	-9.87	-6.56	-1.94	0.98		
	3958	6000						

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3154

TIME 11/08/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0
0.5	76	2118	5.5	2.4	6.0	247
1.0	152	2194	5.8	2.4	6.3	247
1.5	229	2271	9.8	3.83	10.5	249
2.0	305	2347	9.5	3.9	10.1	251
2.5	381	2423	7.8	3.2	8.7	244
3.0	457	2499	6.3	2.2	8.8	226
3.5	533	2575	6.2	1.6	9.8	219
4.0	610	2652	4.5	1.2	9.1	221
4.5	686	2728	7.1	2.2	9.4	229
5.0	762	2804	6.8	2.0	9.1	222
5.5	838	2880	6.4	1.7	10.8	217
6.0	914	2956	6.1	1.4	9.6	219
6.5	991	3033	4.9	0.7	8.3	162
7.0	1067	3109	2.8	1.1	4.4	122
7.5	1143	3185	5.8	4.9	7.6	300
8.0	1219	3261	5.1	4.3	6.7	300
8.5	1295	3337	5.2	3.7	6.4	222
9.0	1372	3414	2.1	4.4	3.9	222
9.5	1448	3490	-1.3	3.4	3.2	145
10.0	1524	3566	1.4	1.8	3.2	204
10.5	1600	3642	1.3	3.3	4.4	197
11.0	1676	3718	0.1	4.3	5.5	182
11.5	1753	3795	1.0	5.0	5.8	191
12.0	1829	3871	2.0	6.6	7.0	166
12.5	1905	3947	-3.3	6.0	6.9	151

COL CB TRACT

ELEV 2042 METERS

SUOUNDING ID 3153

TE 11/10/76 TIME 07:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		6.43		0.0		0.0	0.
1.0	150	2192	6.34	-0.09	-0.93	2.00	2.5	27.
2.0	300	2342	5.58	-0.75	-0.93	2.00	6.0	112.
3.0	458	2500	3.79	-1.64	-2.80	0.13	9.6	122.
3.2	500	2542	3.80	-0.15	-2.80	0.13	9.5	124.
6.1	958	3000	1.22	-2.19	-2.82	0.11	7.0	157.
12.5	1958	4000	-5.75	-7.35	-2.11	0.81	5.5	169.
18.9	2958	5000	-13.54	-7.79	-2.94	-0.01		
25.3	3958	6000	-19.06	-5.52	-1.99	0.94		

COL CB TRACT

ELEV 2042 METERS

SUOUNDING ID 3153

TE 11/10/76 TIME 07:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	0.3	-3.5	3.6	355.
1.0	152.	2104.	-0.7	-2.3	2.4	16.
1.5	229.	2271.	-3.2	-0.1	3.2	88.
2.0	305.	2347.	-5.6	2.5	6.1	114.
2.5	381.	2423.	-4.9	0.3	4.9	93.
3.0	457.	2499.	-8.1	5.1	9.6	122.
3.5	554.	2596.	-7.8	5.5	9.5	125.
4.0	630.	2672.	-7.9	7.1	10.6	132.
4.5	707.	2749.	-6.2	6.9	9.3	138.
5.0	783.	2825.	-4.3	8.4	9.4	153.
5.5	859.	2901.	-2.5	8.3	8.6	163.
6.0	935.	2977.	-3.2	5.6	6.4	150.
6.5	1011.	3053.	-1.2	8.3	8.4	172.
7.0	1088.	3130.	-3.1	5.6	6.4	151.
7.5	1164.	3206.	-0.4	7.0	7.0	177.
8.0	1240.	3282.	-0.4	6.1	6.1	177.
8.5	1316.	3358.	0.1	6.2	6.2	181.
9.0	1392.	3434.	0.3	6.0	6.0	183.
9.5	1469.	3511.	-0.6	6.3	6.4	175.
10.0	1545.	3587.	-0.3	5.8	5.8	177.
10.5	1621.	3663.	-0.7	6.1	6.1	174.
11.0	1697.	3739.	1.1	5.1	5.2	193.
11.5	1785.	3827.	0.0	5.8	5.8	180.
12.0	1882.	3924.	0.3	5.9	5.9	183.
12.5	1958.	4000.	-1.1	5.4	5.5	169.
13.0	2034.	4076.	-0.4	4.3	4.3	174.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3160

DATE 11/10/76 TIME 14:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		8.58		0.0		0.0	0.
1.0	150	2192	8.12	-0.46	-1.84	1.09	6.7	226.
2.0	300	2342	6.72	-1.40	-1.84	1.08	6.8	212.
3.0	458.	2500.	5.21	-1.30	-2.23	0.70	6.5	187.
3.3	500	2542	5.22	-0.21	-2.23	0.70	6.2	197.
6.3	958.	3000.	1.31	-3.90	-2.26	0.67	4.2	176.
12.8	1958.	4000.	-3.11	-4.43	-2.48	0.45		
18.6	2958.	5000.	-12.34	-9.23	-4.30	-1.38		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3160

DATE 11/10/76 TIME 14:00MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	2.8	2.1	3.5	233.
1.0	152.	2194.	4.9	4.8	6.8	225.
1.5	229.	2271.	3.9	5.4	6.6	216.
2.0	305.	2347.	3.6	5.8	6.8	212.
2.5	381.	2423.	2.9	5.3	6.0	209.
3.0	457.	2499.	0.7	5.5	6.5	186.
3.5	533.	2575.	2.5	3.3	5.9	205.
4.0	610.	2652.	2.2	5.8	6.2	200.
4.5	686.	2728.	1.4	5.1	5.3	195.
5.0	762.	2804.	0.3	4.9	4.9	183.
5.5	841.	2883.	0.1	4.5	4.5	181.
6.0	917.	2959.	-0.2	4.8	4.8	178.
6.5	993.	3035.	-0.3	3.6	3.6	175.
7.0	1069.	3111.	-0.7	3.8	3.9	170.
7.5	1145.	3187.	-0.2	3.7	3.7	177.
8.0	1222.	3264.	0.0	4.9	4.9	180.
8.5	1298.	3340.	-0.8	3.9	4.0	169.
9.0	1374.	3416.	-1.0	5.0	5.1	169.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3149

DATE 11/12/76 TIME 08:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		-9.08		0.0		0.0	0.
1.0	150	2192	-9.09	-0.01	1.75	4.67	3.0	196.
2.0	300	2342	-8.69	0.40	1.55	4.48	3.4	182.
3.0	458	2500	-7.12	1.36	7.11	10.04	3.1	184.
3.3	500	2542	-7.13	0.21	7.11	10.04	3.3	179.
3.5	* 533	2575	-7.12		7.11			
5.0	* 761	2803	-2.54		0.38	3.31		
6.3	958	3000	-3.02	4.11	-0.19	2.74	4.8	305.
12.6	1958	4000	-7.61	-4.59	-1.74	1.19		
18.6	2958	5000	-13.94	-6.34	0.0	2.93		
25.0	3958	6000	-20.87	-6.93	-0.80	2.13		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3149

DATE 11/12/76 TIME 08:15MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0.
0.5	76	2118	0.9	2.5	2.6	200.
1.0	152	2194	0.8	2.9	3.0	196.
1.5	229	2271	0.2	2.4	2.4	184.
2.0	305	2347	0.1	3.5	3.5	182.
2.5	381	2423	0.0	3.6	3.6	181.
3.0	457	2499	0.2	3.1	3.1	184.
3.5	533	2575	-0.3	3.5	3.5	175.
4.0	610	2652	1.3	5.4	5.5	194.
4.5	686	2728	2.2	2.8	3.6	217.
5.0	762	2804	3.1	-0.3	3.1	275.
5.5	838	2880	6.0	-2.0	6.3	289.
6.0	914	2956	3.6	-1.3	3.9	290.
6.5	991	3033	3.9	-4.0	5.6	316.
7.0	1067	3109	2.9	-4.1	5.0	325.
7.5	1146	3188	1.7	-5.5	5.8	343.
8.0	1222	3264	2.1	-1.9	5.8	312.
8.5	1299	3341	2.0	-3.8	4.2	333.
9.0	1375	3417	0.5	-2.6	2.6	348.
9.5	1451	3493	0.1	-3.4	3.4	358.
10.0	1527	3569	-1.4	-3.4	3.6	22.
10.5	1603	3645	-0.8	-3.5	3.6	13.
11.0	1683	3725	1.0	-4.8	4.9	349.
11.5	1778	3820	0.6	-3.1	3.2	350.
12.0	1854	3896	0.6	-2.6	2.7	347.



COL CB TRACT

ELEV 2042 METERS

SUUNNING ID 3147

DATE 11/12/76 TIME 13:50MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		-2.05		0.0		0.0	0.
0.9	150	2192	-3.02	-0.96	-4.20	-1.27	3.5	185.
1.6	300	2342	-4.74	-1.72	-3.84	-0.91	4.4	202.
2.4	458.	2500.	-6.43	-1.66	-3.66	-0.73	3.3	237.
2.6	500	2542	-6.89	-0.50	3.27	6.20	3.0	241.
3.0	* 568	2610	-7.12		3.27	6.20		
4.3	* 758	2800	-2.54		1.33	4.26		
5.6	958.	3000.	-2.83	4.18	-1.91	1.02	1.3	149.
11.9	1958.	?4000.	-9.57	-6.86	-2.72	0.21	9.5	143.
18.2	2958.	5000.	-16.94	-7.37	-2.57	0.36		
24.1	3958.	6000.	-24.02	-7.07	-2.80	0.12		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3147

DATE 11/12/76 TIME 13:50MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76	2118.	0.2	3.1	3.1	183.
1.0	170	2212.	0.3	3.6	3.6	185.
1.5	286	2328.	1.4	4.3	4.5	198.
2.0	381	2423.	2.5	2.6	3.6	224.
2.5	484	2526.	2.8	1.5	3.2	242.
3.0	568	2610.	1.9	1.3	2.3	236.
3.5	645	2687.	1.5	0.3	1.5	260.
4.0	721	2763.	2.0	-0.0	2.0	271.
4.5	797	2839.	0.7	0.2	0.7	254.
5.0	873	2915.	1.0	2.2	2.4	204.
5.5	949	2991.	-0.7	1.1	1.3	149.
6.0	1026	3068.	-0.9	1.5	1.8	149.
6.5	1102	3144.	-2.1	2.0	2.9	133.
7.0	1178	3220.	-3.5	2.7	4.4	128.
7.5	1254	3296.	-5.7	3.6	6.7	122.
8.0	1330	3372.	-8.5	4.1	9.5	116.
8.5	1412	3454.	-6.4	3.8	7.4	121.
9.0	1492	3534.	-6.0	3.4	6.9	120.
9.5	1568	3610.	-6.6	3.0	7.2	115.
10.0	1650	3692.	-6.8	4.2	8.0	122.
10.5	1738	3780.	-7.5	5.7	9.4	128.
11.0	1818	3860.	-5.4	5.0	7.4	133.
11.5	1894	3936.	-5.8	7.0	9.1	141.
12.0	1972	4014.	-5.8	7.7	9.6	143.
12.5	2048.	4090.	-4.2	5.3	6.8	142.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3148

DATE 11/15/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		-2.92		0.0		0.0	0.
1.0	150	2192	-3.12	-0.20	-0.19	2.74	1.4	62.
2.0	300	2342	-4.08	-0.96	-2.68	0.25	3.9	35.
3.0	458	2500	-5.16	-1.65	-0.38	2.54	4.6	28.
3.3	500	2542	-5.20	0.53	-0.38	2.54	5.3	26.
6.2	958	3000	-8.10	-2.90	-0.77	2.15	12.4	11.
12.8	1958	4000	-8.12	-0.02	1.16	4.09		
19.0	2958	5000	-15.63	-7.52	-3.35	-0.42		
25.1	3958	6000	-23.00	-7.37	-4.40	-1.47		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3148

DATE 11/15/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0.
0.5	76	2118	-0.9	-0.2	0.9	75.
1.0	152	2194	-1.3	-0.7	1.4	61.
1.5	229	2271	-1.5	-1.4	2.0	47.
2.0	305	2347	-2.3	-3.4	4.0	34.
2.5	381	2423	-2.1	-4.1	4.6	28.
3.0	457	2499	-2.2	-4.1	4.6	29.
3.5	533	2575	-2.4	-5.4	5.9	24.
4.0	610	2652	-2.5	-8.4	8.7	17.
4.5	686	2728	-0.1	-10.1	10.1	1.
5.0	762	2804	-1.0	-10.9	11.0	5.
5.5	844	2886	-2.5	-13.4	13.7	10.
6.0	920	2962	-2.3	-12.6	12.8	10.
6.5	996	3038	-2.3	-11.6	11.9	11.
7.0	1073	3115	-2.8	-8.5	8.9	18.
7.5	1149	3191	-3.7	-8.0	8.8	25.
8.0	1225	3267	-3.7	-7.0	7.9	28.
8.5	1301	3343	-2.3	-6.8	7.1	19.
9.0	1377	3419	-2.5	-5.9	6.5	23.
9.5	1454	3496	-2.8	-6.6	7.1	23.
10.0	1530	3572	-2.2	-7.6	7.9	16.
10.5	1612	3654	-2.1	-9.2	9.4	13.
11.0	1690	3732	-1.3	-12.0	12.1	6.
11.5	1766	3808	-1.5	-9.4	9.5	9.
12.0	1842	3884	-1.7	-10.6	10.8	9.
12.5	1919	3961	-1.5	-5.2	5.4	16.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3152

DATE 11/15/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		3.50		0.0		0.0	0.
0.9	150	2192	2.02	-1.48	-3.00	-0.07	2.3	97.
1.9	300	2342	0.93	-1.09	-1.88	1.04	2.4	153.
2.9	458.	2500.	-0.61	-1.51	-4.17	-1.24	2.0	190.
3.1	500	2542	-1.24	-0.66	-4.18	-1.25	1.9	206.
5.8	958.	3000.	-5.16	-3.90	-1.73	1.20	4.8	256.
12.3	1958.	4000.	-9.77	-4.62	-3.31	-0.38	14.7	155.
18.8	2958.	5000.	-15.04	-5.27	-1.38	1.55		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3152

DATE 11/15/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0.
0.5	76	2118	-2.7	0.5	2.8	101.
1.0	162	2204	-2.3	0.3	2.3	97.
1.5	238	2280	-1.1	1.0	1.5	133.
2.0	314	2356	-1.0	2.4	2.6	158.
2.5	391	2433	-0.9	1.5	1.8	150.
3.0	477	2519	0.8	1.9	2.1	202.
3.5	588	2630	0.8	1.0	1.3	221.
4.0	689	2731	1.5	0.8	1.7	241.
4.5	766	2808	1.8	1.5	2.4	230.
5.0	842	2884	3.1	2.1	3.8	236.
5.5	918	2960	4.2	2.2	4.8	243.
6.0	995	3037	4.8	0.2	4.9	268.
6.5	1071	3113	5.4	-0.3	5.4	273.
7.0	1147	3189	6.8	-1.5	7.0	283.
7.5	1223	3265	5.1	-2.8	5.8	299.
8.0	1305	3347	6.1	-5.4	8.1	312.
8.5	1381	3423	5.9	-6.4	8.7	318.
9.0	1458	3500	6.7	-8.3	10.7	321.
9.5	1534	3576	5.2	-8.5	10.0	328.
10.0	1610	3652	4.4	-8.9	10.0	334.
10.5	1686	3728	7.1	-8.8	11.3	321.
11.0	1762	3804	2.6	-16.1	16.3	351.
11.5	1839	3881	2.1	-15.1	15.3	352.
12.0	1915	3957	1.7	-16.7	16.8	354.
12.5	1991	4033	-0.6	-13.2	13.2	3.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3150

DATE 11/16/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		0.07		0.0		0.0	0.
1.0	150	2192	-0.22	-0.29	-0.38	2.55	2.9	319.
2.0	300	2342	-1.18	-0.99	-3.79	-0.87	4.6	344.
2.9	458	2500	-2.83	-1.63	-2.10	0.83	7.3	351.
3.2	500	2542	-3.02	-0.21	-2.67	0.25	7.0	232.
5.4	958	3000	-7.70	-4.68	-4.25	-1.33	13.0	348.
11.6	1958	4000	-15.14	-7.44	-0.39	2.53	M	M
18.1	2958	5000	-16.04	-0.91	0.99	3.91		
23.9	3958	6000	-24.11	-8.07	-6.01	-3.08		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3150

DATE 11/16/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	0.0	0.0	0.0	0.
0.5	76	2118	2.5	0.3	2.5	264.
1.0	152	2194	1.8	-2.2	2.9	320.
1.5	229	2271	1.2	-2.6	2.9	335.
2.0	305	2347	1.3	-4.5	4.7	344.
2.5	392	2434	1.6	-5.6	5.8	344.
3.0	474	2516	1.0	-7.6	7.6	352.
3.5	550	2592	-0.3	-5.8	5.8	3.
4.0	632	2674	0.4	-6.2	6.2	356.
4.5	729	2771	1.2	-7.4	7.5	351.
5.0	851	2893	1.0	-12.4	12.4	355.
5.5	974	3016	2.9	-12.8	13.1	347.
6.0	1077	3119	2.4	-13.6	13.8	350.
6.5	1155	3197	2.4	-13.9	14.2	350.
7.0	1233	3275	3.2	-16.3	16.6	349.
7.5	1313	3355	2.4	-16.2	16.4	352.
8.0	1389	3431	1.3	-13.2	13.3	354.
8.5	1466	3508	-0.0	-11.7	11.7	0.
9.0	1542	3584	-0.2	-12.2	12.2	1.
9.5	1618	3660	0.6	-11.5	11.6	357.
10.0	1694	3736	1.0	-13.1	13.2	356.
10.5	1784	3826	-0.3	-15.5	15.5	1.
11.0	1873	3915	0.6	-16.2	16.2	358.
11.5	1950	3992	1.5	-15.3	15.4	354.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3145

DATE 11/16/76 TIME 14:50MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		9.05		0.0		2.6	45.
0.7	150	2192	4.41	-4.63	-5.04	-2.11	2.5	14.
1.0	300	2342	3.34	-1.07	-3.75	-0.82	5.0	16.
1.8	458.	2500.	1.60	-1.69	-3.38	-0.45	2.9	20.
2.0	500	2542	1.60	-0.06	-3.38	-0.45	2.1	18.
4.3	958.	3000.	-3.21	-4.80	-4.01	-1.08	2.5	352.
9.6	1958.	4000.	-7.41	-4.21	0.19	3.12	24.2	281.
15.7	2958.	5000.	-12.95	-5.54	2.93	5.86		
22.0	3958.	6000.	-18.05	-5.10	-2.97	-0.04		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3145

DATE 11/16/76 TIME 14:50MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042	-1.8	-1.8	2.6	45.
0.5	76.	2118	-0.3	-1.2	1.3	12.
1.0	295.	2337	-1.4	-4.8	5.0	16.
1.5	407.	2449	-1.4	-3.6	3.8	21.
2.0	502.	2544	-0.6	-2.0	2.1	18.
2.5	583.	2625	-0.9	-1.3	1.6	33.
3.0	659.	2701	-1.7	-0.3	1.7	79.
3.5	755.	2797	-1.1	-0.8	1.4	54.
4.0	878.	2920	0.7	-2.5	2.7	344.
4.5	994.	3036	0.2	-2.5	2.5	356.
5.0	1106.	3148	0.5	-2.3	2.4	349.
5.5	1245.	3287	1.0	-3.8	3.9	346.
6.0	1377.	3419	0.6	-4.0	4.0	352.
6.5	1485.	3527	1.5	-3.8	4.0	338.
7.0	1561.	3603	2.7	-3.8	4.7	325.
7.5	1637.	3679	4.7	-7.4	8.8	328.
8.0	1713.	3755	1.2	-16.5	16.5	356.
8.5	1789.	3831	7.7	-19.3	20.8	338.
9.0	1866.	3908	1.5	-19.5	19.6	356.
9.5	1942.	3984	1.8	-25.8	25.9	356.
10.0	2018.	4060	-0.2	-17.9	17.9	1.
10.5	2094.	4136	-1.3	-22.1	22.1	3.
11.0	2170.	4212	-4.0	-20.8	21.2	11.
11.5	2247.	4289	-4.0	-16.1	16.6	14.
12.0	2323.	4365	-4.8	-15.1	15.8	18.
12.5	2403.	4405	-4.3	-16.5	17.0	15.
13.0	2483.	4525	-5.7	-13.3	14.5	23.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3146

DATE 11/18/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		2.74		0.0			
1.0	150	2192	5.20	2.45	3.35	6.28	2.6	179.
1.5	* 228	2270	5.58		0.56	3.48		
2.0	300	2342	5.49	0.29	-1.49	1.44	4.0	165.
3.0	458.	2500.	3.88	-1.30	-1.68	1.25	2.8	148.
3.3	500	2542	3.90	-0.29	-1.68	1.25	2.9	130.
6.3	958.	3000.	1.98	-1.91	-1.50	1.43	2.7	225.
12.8	1958.	4000.	-2.73	-4.72	-2.29	0.64	2.4	301.
19.4	2958.	5000.	-9.57	-6.85	-2.33	0.60		
25.8	3958.	6000.	-17.04	-7.47	-2.37	0.56		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3146

DATE 11/18/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
				THE WIND DATA ARE MISSING		
0.5	76.	2118.	0.0	1.4	1.4	182.
1.0	152.	2194.	-0.1	2.6	2.6	179.
1.5	229.	2271.	-0.6	5.3	5.3	174.
2.0	305.	2347.	-1.1	3.8	3.9	164.
2.5	381.	2423.	-1.2	3.1	3.3	158.
3.0	457.	2499.	-1.5	2.4	2.8	148.
3.5	533.	2575.	-2.7	1.2	2.9	115.
4.0	610.	2652.	1.7	2.1	2.7	219.
4.5	686.	2728.	0.3	1.5	1.5	191.
5.0	762.	2804.	1.2	0.8	1.4	238.
5.5	838.	2880.	1.3	0.6	1.4	244.
6.0	914.	2956.	1.7	0.8	1.9	244.
6.5	991.	3033.	1.7	2.9	3.4	210.
7.0	1067.	3109.	0.4	0.8	0.9	204.
7.5	1143.	3185.	0.6	2.1	2.2	196.
8.0	1219.	3261.	0.3	2.4	2.4	187.
8.5	1295.	3337.	0.2	1.8	1.8	186.
9.0	1372.	3414.	0.6	3.2	3.2	190.
9.5	1448.	3490.	0.2	1.2	1.2	192.
10.0	1524.	3566.	2.2	1.5	2.7	236.
10.5	1600.	3642.	2.6	-0.2	2.6	275.
11.0	1676.	3718.	1.4	-3.5	3.8	338.
11.5	1753.	3795.	1.5	-2.3	2.7	328.
12.0	1829.	3871.	1.3	-1.5	2.0	318.
12.5	1905.	3947.	2.3	-1.9	2.9	310.
13.0	1981.	4023.	2.0	-1.0	2.2	297.
13.5	2057.	4099.	3.7	-1.0	3.8	286.
14.0	2134.	4176.	2.2	0.2	2.2	265.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3143

ATE 11/18/76 TIME 12:40MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
0.9	SFC		12.83		0.0		4.1	225.
1.7	150	2192	10.51	-2.31	-3.64	-0.71	4.7	303.
2.4	300	2342	9.24	-1.27	-4.22	-1.29	3.6	280.
2.6	458.	2500.	7.37	-1.84	-3.68	-0.75	3.6	294.
5.5	500	2542	6.84	-0.56	-1.84	1.08	4.1	311.
12.0	958.	3000.	4.64	-2.11	-1.86	1.07	5.1	5.
18.5	1958.	4000.	-1.76	-6.50	-2.09	0.84	1.1	278.
24.6	2958.	5000.	-7.21	-5.45	-3.48	-0.55		
	3958.	6000.	-16.33	-9.12	-3.94	-1.01		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3143

ATE 11/18/76 TIME 12:40MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	2.9	2.9	4.1	225.
0.5	76.	2118.	3.9	-1.2	4.1	287.
1.0	174.	2216.	3.8	-3.0	4.9	308.
1.5	264.	2306.	3.9	-1.4	4.1	290.
2.0	376.	2418.	2.4	0.5	2.4	259.
2.5	490.	2532.	3.3	-2.4	4.1	307.
3.0	575.	2617.	1.4	-4.1	4.3	341.
3.5	651.	2693.	1.0	-4.1	4.2	346.
4.0	727.	2769.	0.7	-5.1	5.2	352.
4.5	803.	2845.	0.6	-5.1	5.1	353.
5.0	879.	2921.	-0.2	-4.4	4.4	2.
5.5	956.	2998.	-0.4	-5.1	5.1	5.
6.0	1032.	3074.	-1.0	-4.1	4.2	14.
6.5	1108.	3150.	-2.5	-1.3	2.9	63.
7.0	1191.	3233.	-0.3	-0.5	0.6	29.
7.5	1274.	3316.	-0.9	-0.7	1.1	51.
8.0	1353.	3395.	-0.7	-0.7	1.0	46.
8.5	1429.	3471.	-0.7	-0.4	0.8	57.
9.0	1505.	3547.	-0.9	-0.9	1.3	44.
9.5	1582.	3624.	0.5	-2.0	2.1	346.
10.0	1658.	3700.	1.6	-2.2	2.8	324.
10.5	1734.	3776.	3.0	-3.0	4.3	315.
11.0	1810.	3852.	4.6	-0.7	4.6	279.
11.5	1886.	3928.	1.2	0.1	1.2	264.
12.0	1963.	4005.	1.1	-0.2	1.1	279.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3142

DATE 11/19/76 TIME 07:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		1.69		0.0			
1.0	150	2192	3.49	1.80	1.87	4.80	1.4	232.
1.3	* 190	2232	3.69		1.31	4.24		
2.0	300	2342	3.41	-0.08	-0.56	2.37	2.0	282.
3.0	458.	2500.	3.22	-0.02	-0.75	2.18	2.1	284.
3.3	500	2542	3.23	-0.16	-0.75	2.18	1.8	277.
6.2	958.	3000.	2.08	-1.16	1.31	4.24	4.2	229.
12.8	1958.	4000.	-1.86	-3.92	-3.80	-0.87	12.6	313.
18.6	2958.	5000.	-10.66	-8.81	-1.75	1.18		
25.0	3958.	6000.	-16.34	-5.68	-4.73	-1.80		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3142

DATE 11/19/76 TIME 07:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
THE WIND DATA ARE MISSING						
0.5	76.	2118.	0.7	1.0	1.2	214.
1.0	152.	2194.	1.1	0.9	1.4	233.
1.5	229.	2271.	1.7	0.8	1.8	245.
2.0	305.	2347.	1.9	-0.5	2.0	285.
2.5	381.	2423.	2.0	-0.6	2.1	287.
3.0	457.	2499.	2.1	-0.5	2.1	284.
3.5	533.	2575.	1.5	-0.0	1.5	271.
4.0	610.	2652.	1.3	1.3	1.8	226.
4.5	686.	2728.	1.0	1.4	1.7	217.
5.0	762.	2804.	1.3	2.5	2.9	208.
5.5	838.	2880.	0.9	3.0	3.1	197.
6.0	914.	2956.	2.6	2.9	3.9	221.
6.5	991.	3033.	3.7	2.6	4.5	235.
7.0	1067.	3109.	4.2	0.2	4.2	268.
7.5	1143.	3185.	4.2	-1.3	4.4	287.
8.0	1219.	3261.	4.4	-2.1	4.9	296.
8.5	1295.	3337.	4.4	-3.5	5.6	308.
9.0	1372.	3414.	6.9	-5.4	8.7	308.
9.5	1448.	3490.	7.2	-5.0	8.7	305.
10.0	1524.	3566.	8.2	-5.2	9.7	303.
10.5	1600.	3642.	8.4	-5.8	10.2	305.
11.0	1676.	3718.	8.0	-6.9	10.6	311.
11.5	1753.	3795.	8.8	-8.7	12.4	315.
12.0	1829.	3871.	9.5	-7.9	12.4	310.
12.5	1905.	3947.	8.4	-9.6	12.8	319.
13.0	1987.	4029.	9.6	-7.9	12.4	310.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3142

ATE 11/19/76 TIME 12:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		13.92		0.0		2.6	320.
0.7	150	2192	11.75	-2.18	-5.46	-2.53	5.8	332.
1.1	300	2342	9.39	-2.35	-5.31	-2.38	7.5	322.
1.6	458.	2500.	7.55	-1.56	-5.52	-2.59	4.1	294.
1.8	500	2542	7.57	-0.27	-5.52	-2.59	3.3	293.
4.2	958.	3000.	3.98	-3.59	-1.30	1.62	4.5	211.
10.6	1958.	4000.	-2.83	-6.31	-2.86	0.07	10.0	289.
17.0	2958.	5000.	-8.59	-6.26	-2.71	0.22		
23.5	3958.	6000.	-15.44	-6.85	-2.95	-0.03		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3142

ATE 11/19/76 TIME 12:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	1.7	-2.0	2.6	320.
0.5	76.	2118.	1.9	-3.5	4.0	332.
1.0	256.	2298.	4.1	-7.4	8.5	331.
1.5	424.	2466.	4.3	-2.0	4.7	295.
2.0	548.	2590.	2.3	-0.9	2.4	291.
2.5	665.	2707.	2.2	0.4	2.3	260.
3.0	768.	2810.	3.2	2.7	4.2	230.
3.5	846.	2888.	1.0	0.8	1.3	230.
4.0	922.	2964.	2.2	3.3	4.0	2214.
4.5	999.	3041.	2.3	4.5	5.1	207.
5.0	1075.	3117.	3.4	4.0	5.2	220.
5.5	1151.	3193.	4.5	1.8	4.8	249.
6.0	1227.	3269.	3.8	-0.3	3.9	274.
6.5	1303.	3345.	3.2	-1.3	3.5	292.
7.0	1380.	3422.	3.3	-3.4	4.7	316.
7.5	1456.	3498.	4.9	-3.7	6.1	307.
8.0	1532.	3574.	5.0	-1.2	5.1	283.
8.5	1608.	3650.	6.7	-2.2	7.1	288.
9.0	1684.	3726.	7.7	-2.3	8.1	286.
9.5	1761.	3803.	7.7	-2.3	8.0	287.
10.0	1837.	3879.	8.1	-2.8	8.6	289.
10.5	1936.	3978.	9.4	-3.0	9.9	287.
11.0	2030.	4072.	9.6	-4.2	10.4	294.
11.5	2106.	4148.	11.7	-6.6	13.5	299.
12.0	2185.	4227.	10.1	-6.1	11.8	301.
12.5	2270.	4312.	11.5	-8.2	14.1	306.
13.0	2346.	4388.	11.8	-9.8	15.4	310.
13.5	2422.	4464.	10.9	-10.0	14.8	312.
14.0	2502.	4544.	11.9	-11.4	16.5	314.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3144

DATE 11/22/76 TIME 07:20MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		1.79		0.0		0.0	0.
1.0	150	2192	2.84	1.05	2.06	4.99	1.7	205.
2.0	300	2342	2.93	0.10	-0.75	2.18	1.7	207.
3.0	458.	2500.	1.79	-0.95	-1.88	1.05	1.6	232.
3.3	500	2542	1.80	-0.18	-1.88	1.05	1.4	232.
6.3	958.	3000.	-1.38	-3.16	-3.60	-0.68	4.3	307.
12.6	1958.	4000.	-10.07	-8.32	-2.92	0.01	12.2	299.
18.7	2958.	5000.	-17.85	-8.18	-1.78	1.15		
25.0	3958.	6000.	-23.92	-6.07	-3.80	-0.88		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3144

DATE 11/22/76 TIME 07:20MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	0.3	0.9	0.9	196.
1.0	152.	2194.	0.8	1.6	1.8	205.
1.5	229.	2271.	1.1	1.5	1.8	216.
2.0	305.	2347.	0.7	1.5	1.7	206.
2.5	381.	2423.	0.4	1.4	1.5	198.
3.0	457.	2499.	1.3	1.0	1.6	232.
3.5	533.	2575.	1.0	0.8	1.3	232.
4.0	610.	2652.	0.9	0.55	1.1	240.
4.5	686.	2728.	1.8	-0.33	1.8	280.
5.0	762.	2804.	2.8	-1.4	3.2	297.
5.5	838.	2880.	2.8	-1.6	3.2	299.
6.0	915.	2957.	4.3	-2.7	5.1	302.
6.5	996.	3038.	2.8	-2.5	3.7	312.
7.0	1080.	3122.	5.3	-4.1	6.7	307.
7.5	1156.	3198.	5.1	-4.4	6.7	311.
8.0	1232.	3274.	7.4	-5.7	9.3	307.
8.5	1309.	3351.	8.1	-6.4	10.3	308.
9.0	1385.	3427.	8.7	-7.6	11.5	311.
9.5	1462.	3504.	8.7	-7.9	11.8	312.
10.0	1539.	3581.	7.7	-7.4	10.7	314.
10.5	1621.	3663.	9.1	-9.3	13.0	316.
11.0	1698.	3740.	9.5	-8.3	12.6	311.
11.5	1774.	3816.	10.5	-7.8	13.1	306.
12.0	1851.	3893.	9.6	-5.6	11.1	300.
12.5	1937.	3979.	11.2	-6.2	12.8	299.
13.0	2023.	4065.	8.9	-4.9	10.2	299.
13.5	2099.	4141.	9.7	-4.6	10.7	295.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3140

ATE 11/22/76 TIME 13:45MST

ASCENT RATE 500 FPM

DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		7.46		0.0		0.0	0.
1.0	150	2192	6.43	-1.03	-1.48	1.45	2.8	294.
2.0	300	2342	5.58	-0.84	-2.23	0.70	5.2	282.
3.0	458.	2500.	3.88	-1.70	-2.42	0.50	4.9	272.
3.2	500	2542	3.44	-0.49	-2.62	0.31	4.8	266.
6.1	958.	3000.	-1.28	-4.03	-3.41	-0.48	6.5	253.
10.7	1958.	4000.	-11.06	-9.96	-3.90	-0.97	10.8	288.
16.4	2958.	5000.	-17.95	-7.39	-0.99	1.94		
22.3	3958.	6000.	-25.94	-8.00	-5.23	-2.30		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3140

ATE 11/22/76 TIME 13:45MST

ASCENT RATE 500 FPM

DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	2.4	-1.3	2.7	299.
1.0	152.	2194.	2.6	-1.1	2.8	294.
1.5	229.	2271.	4.5	-1.2	4.6	285.
2.0	305.	2347.	5.2	-1.1	5.3	282.
2.5	381.	2423.	5.3	-0.5	5.3	276.
3.0	462.	2504.	4.8	-0.1	4.8	272.
3.5	545.	2587.	4.6	0.8	4.6	260.
4.0	621.	2663.	4.3	1.8	4.6	247.
4.5	697.	2739.	4.1	1.7	4.4	247.
5.0	778.	2820.	5.9	1.9	6.2	252.
5.5	867.	2909.	6.6	2.2	7.0	252.
6.0	943.	2985.	6.1	1.9	6.4	252.
6.5	1027.	3069.	6.7	1.7	6.9	256.
7.0	1123.	3165.	7.6	1.8	7.8	257.
7.5	1215.	3257.	6.7	1.4	6.8	259.
8.0	1319.	3361.	8.1	1.0	8.1	263.
8.5	1463.	3505.	11.9	0.3	11.9	269.
9.0	1607.	3649.	11.6	-0.4	11.7	272.
9.5	1704.	3746.	8.8	-1.6	9.0	280.
10.0	1807.	3849.	10.2	-2.1	10.4	282.
10.5	1918.	3960.	9.8	-2.1	10.1	282.
11.0	2018.	4060.	10.6	-5.6	12.0	298.
11.5	2130.	4172.	12.4	-7.9	14.7	303.
12.0	2207.	4249.	8.6	-6.7	10.9	308.
12.5	2284.	4326.	8.5	-8.0	11.6	313.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3136

TE 11/24/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		2.74		0.0		M	M
1.0	150	2192	2.55	-0.19	0.56	3.49	M	M
2.0	300	2342	2.08	-0.47	-1.31	1.62	M	M
3.0	458	2500	1.79	-0.29	-1.50	1.43	M	M
3.3	500	2542	1.61	-0.18	-1.50	1.42	M	M
6.3	958	3000	-1.47	-3.08	-1.33	1.60	4.4	248
12.6	1958	4000	-9.58	-7.61	-1.94	0.99	11.2	263
18.5	2958	5000	-16.94	-7.86	-0.99	1.94		
24.0	3958	6000	-26.16	-9.21	-5.41	-0.49		

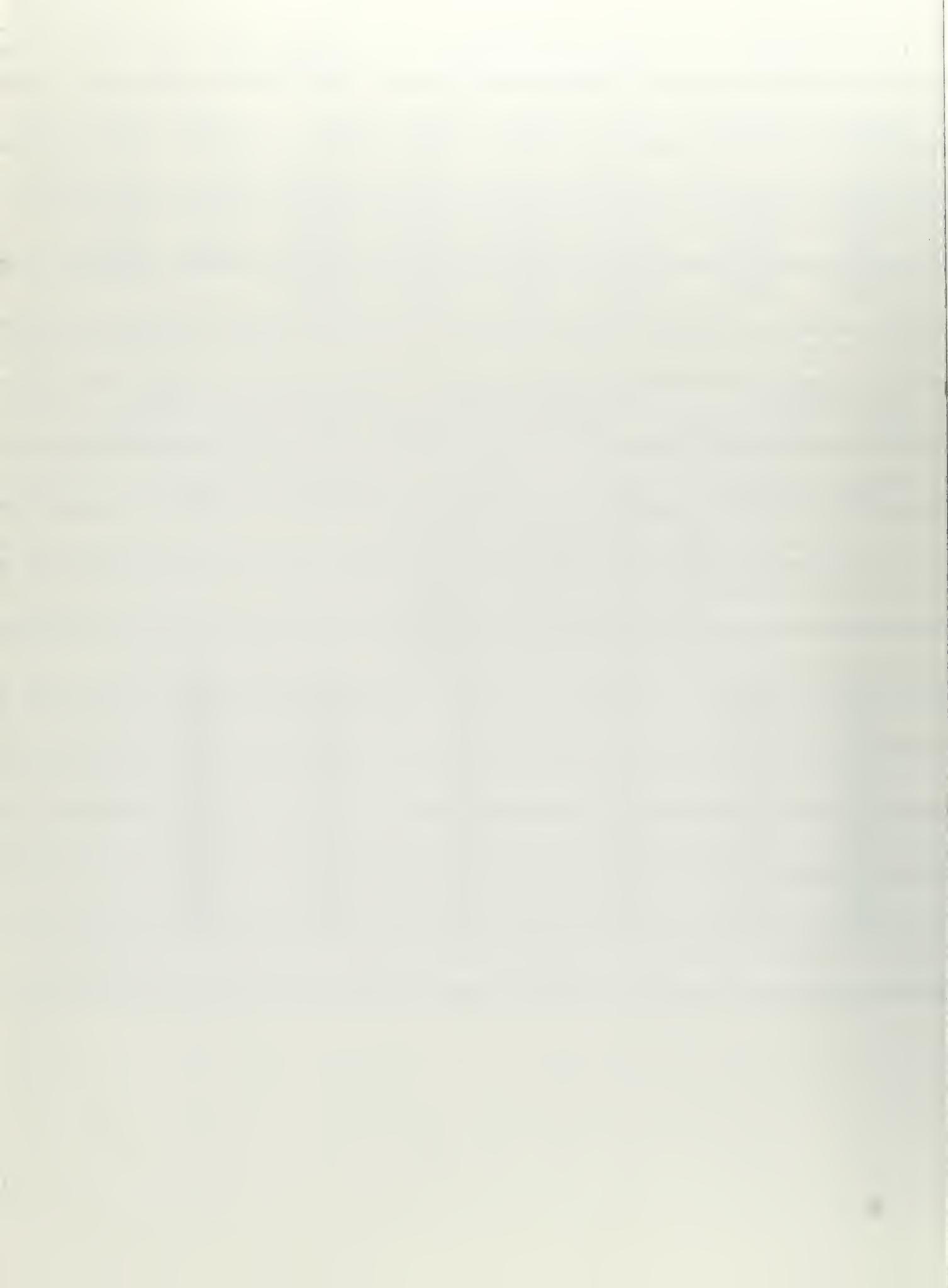
COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3136

TE 11/24/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
			THE WIND DATA ARE MISSING			
5.0	762	2804	4.0	2.8	4.9	235
5.5	838	2880	4.4	2.8	5.3	237
6.0	915	2957	4.5	1.9	4.8	247
6.5	991	3033	3.8	1.5	4.0	248
7.0	1067	3109	4.1	1.7	4.4	247
7.5	1143	3185	4.3	2.2	4.8	243
8.0	1219	3261	5.2	1.4	5.4	254
8.5	1296	3338	5.4	1.0	5.5	259
9.0	1372	3414	5.4	1.3	5.5	257
9.5	1448	3490	6.3	0.0	6.3	270
0.0	1524	3566	5.3	1.4	5.5	256
0.5	1600	3642	10.1	-1.1	10.2	276
1.0	1703	3745	11.1	0.7	11.1	266
1.5	1779	3821	10.3	0.9	10.3	265
2.0	1855	3897	11.3	0.6	11.3	267
2.5	1943	3985	11.7	1.5	11.8	263
3.0	2020	4062	8.8	1.4	8.9	261



COL CR TRACT

ELEV 2042 METERS

SOUNDING ID 3138

DATE 11/24/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		12.37		0.0		0.0	0.
0.9	150	2192	10.17	-2.20	-2.92	0.01	4.1	216.
1.6	300	2342	8.29	-1.89	-4.59	-1.67	4.5	208.
2.3	458.	2500.	6.71	-1.53	-4.43	-1.51	5.6	215.
2.5	500	2542	6.12	-0.64	-4.64	-1.71	5.9	214.
4.9	958.	3000.	2.08	-4.03	-3.94	-1.02	1.4	203.
10.8	1958.	4000.	-4.67	-6.75	-2.30	0.63	5.1	262.
16.6	2958.	5000.	-14.14	-9.47	-2.55	0.37		
22.2	3958.	6000.	-24.12	-9.98	-4.01	-1.08		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 3138

DATE 11/24/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.
0.5	76.	2118.	2.0	2.5	3.0	218.
1.0	180.	2222.	2.5	3.7	4.0	214.
1.5	269.	2311.	1.8	3.8	4.0	206.
2.0	386.	2428.	3.0	4.2	5.0	215.
2.5	498.	2540.	3.3	4.8	5.5	214.
3.0	613.	2655.	3.4	4.3	5.5	219.
3.5	726.	2768.	3.0	3.8	4.9	219.
4.0	811.	2853.	1.7	2.6	3.1	214.
4.5	887.	2929.	1.6	2.7	3.1	211.
5.0	980.	3022.	0.3	0.8	0.8	200.
5.5	1076.	3118.	1.8	0.7	2.0	249.
6.0	1169.	3211.	2.2	0.1	2.2	2267.
6.5	1263.	3305.	2.1	-0.2	2.2	274.
7.0	1347.	3389.	2.4	-0.3	2.4	278.
7.5	1444.	3486.	2.7	-0.3	2.7	265.
8.0	1520.	3562.	2.0	-0.9	2.2	294.
8.5	1597.	3639.	2.6	-1.2	2.9	294.
9.0	1673.	3715.	2.4	0.8	2.6	251.
9.5	1753.	3795.	3.9	0.0	3.9	270.
10.0	1820.	3871.	4.0	0.6	4.1	2261.
10.5	1905.	3947.	4.8	1.2	4.9	256.
11.0	1982.	4024.	5.2	0.5	5.2	265.
11.5	2061.	4103.	6.0	0.7	6.0	270.
12.0	2146.	4188.	7.2	-0.0	7.2	271.
12.5	2239.	4281.	7.9	-0.2	7.9	271.
13.0	2347.	4389.	9.3	-0.1	9.3	271.



COL CB TRACT ELEV 2042 METERS SOUNDING ID 3137
 TE 11/29/76 TIME 08:25MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		-9.87		0.0		0.0	0.
0.8	150	2192	-12.22	-2.34	-2.35	0.58	M	M
1.8	300	2342	-13.13	-0.92	-0.20	2.73	M	M
2.8	458.	2500.	-12.75	0.39	-0.20	2.73	M	M
3.1	500	2542	-12.84	-0.10	-1.57	1.36	M	M
6.0	958.	3000.	-16.34	-3.50	0.0	2.93	M	M
8.0	*1278	3320	-18.05		1.19	4.11		
9.8	*1545	3587	-15.04		0.59	3.52		
12.3	1958	4000	-18.95	-2.61	-2.78	0.15		
18.2	2958:	5000:	-26.77	-7.82	-1.81	1.12		

COL CB TRACT ELEV 2042 METERS SOUNDING ID 3137
 TE 11/29/76 TIME 08:25MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 2867

TE 11/29/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
0.9	SFC		0.83		0.0		5.1	315.
1.7	150	2192	-1.23	-2.06	-3.79	-0.87	3.1	324.
2.3	300	2342	-2.80	-1.56	-4.77	-1.85	4.4	330.
2.5	458.	2500.	-4.67	-1.81	-6.91	-3.98	5.6	335.
4.0	500	2542	-4.66	-0.06	-6.91	-3.98	5.9	338.
9.9	958.	3000.	-9.08	-4.42	-2.72	0.21	7.4	305.
16.3	1958.	4000.	-16.84	-7.76	-1.58	1.35	10.3	305.
20.5	2958.	5000.	-20.37	-3.53	0.0	2.93		
	3958.	6000.	-29.54	-9.16	-2.62	0.30		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 2867

TE 11/29/76 TIME 14:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	3.6	-3.6	5.1	315.
0.5	76.	2118.	1.9	-3.4	3.9	331.
1.0	172.	2214.	1.8	-2.2	2.8	521.
1.5	269.	2311.	2.1	-3.6	4.1	330.
2.0	370.	2412.	2.5	-4.3	4.9	330.
2.5	509.	2551.	2.2	-5.6	6.0	339.
3.0	685.	2727.	2.0	-4.8	5.2	338.
3.5	851.	2893.	2.5	-4.5	5.2	331.
4.0	952.	2994.	6.2	-4.1	7.4	304.
4.5	1028.	3070.	5.1	-5.2	7.3	316.
5.0	1111.	3153.	3.9	-6.2	7.3	328.
5.5	1227.	3269.	6.0	-9.7	11.4	329.
6.0	1346.	3388.	5.7	-9.6	11.2	330.
6.5	1436.	3478.	4.3	-8.9	9.9	334.
7.0	1514.	3556.	3.6	-7.8	8.5	335.
7.5	1590.	3632.	3.7	-4.3	5.6	319.
8.0	1667.	3709.	4.4	-4.5	6.2	316.
8.5	1743.	3785.	6.6	-6.1	9.0	313.
9.0	1823.	3865.	7.0	-6.1	9.3	311.
9.5	1900.	3942.	8.5	-6.0	10.4	305.
0.0	1976.	4018.	8.5	-5.9	10.3	305.
0.5	2052.	4094.	7.1	-7.7	10.5	318.
1.0	2128.	4170.	7.2	-11.5	13.6	328.
1.5	2204.	4246.	5.7	-5.3	7.8	313.
2.0	2281.	4323.	9.4	-7.2	11.8	308.



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 2865

TE 11/30/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		-1.09		0.0		2.8	45
0.9	150	2192	-3.03	-1.94	0.0	2.93	2.5	154
1.9	300	2342	-4.06	-1.03	-3.83	-0.90	2.1	211
2.6	458	2500	-6.43	-2.01	-2.69	0.04	2.0	216
2.8	500	2542	-6.41	-0.35	-2.89	0.04	2.1	224
5.8	958	3000	-7.61	-1.18	-3.09	-0.17	7.9	285
12.2	1958	4000	-13.74	-6.15	-2.94	-0.02		
18.5	2958	5000	-22.58	-8.84	-5.99	-3.06		
23.4	3958	6000	-31.08	-8.49	-3.44	-0.51		

COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 2865

TE 11/30/76 TIME 08:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0	2042	-2.0	-2.0	2.8	45
0.5	76	2118	-1.0	-0.6	1.2	57
1.0	163	2205	-0.4	2.7	2.7	171
1.5	239	2281	1.0	1.9	2.1	208
2.0	325	2367	1.2	1.8	2.1	213
2.5	435	2477	1.0	1.6	1.9	212
3.0	532	2574	1.7	1.4	2.1	231
3.5	608	2650	4.1	2.6	4.9	238
4.0	684	2726	6.1	1.9	6.4	253
4.5	760	2802	3.0	1.3	3.3	246
5.0	836	2878	3.5	1.0	3.6	254
5.5	913	2955	7.4	1.7	7.6	283
6.0	989	3031	7.8	1.5	8.2	287
6.5	1075	3117	7.5	1.5	8.0	289
7.0	1151	3193	7.2	3.0	7.8	295
7.5	1227	3269	9.7	5.9	11.4	301
8.0	1303	3345	8.7	5.9	10.5	304
8.5	1385	3427	8.9	4.7	10.0	298
9.0	1461	3503	7.7	5.1	9.2	304
9.5	1537	3579	7.8	7.0	10.5	312
10.0	1613	3655	9.1	8.1	12.2	312
10.5	1690	3732	10.2	9.6	14.0	313
11.0	1766	3808	10.8	11.6	15.9	317



COL CB TRACT

ELEV 2042 METERS

SOUNDING ID 2863

TE 11/30/76 TIME 13:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	TEMP DEG C	D/T STD	D/T 300M	D/T LAPSE	WS M/S	WD DEG
	SFC		4.64		0.0		0.0	0.
0.8	150	2192	2.20	-2.44	-4.88	-1.95	M	M
1.4	300	2342	0.85	-1.35	-3.77	-0.84	M	M
2.2	458.	2500.	-0.31	-1.16	-4.36	-1.43	M	M
2.4	500	2542	-1.06	-0.75	-4.55	-1.62	M	M
4.9	958.	3000.	-4.68	-3.61	0.57	3.50	M	M
11.1	1958.	4000.	-9.68	-5.00	-1.56	1.37	M	M
17.4	2958.	5000.	-17.04	-7.36	-2.17	0.75		
22.9	3958.	6000.	-24.94	-7.89	0.60	3.53		

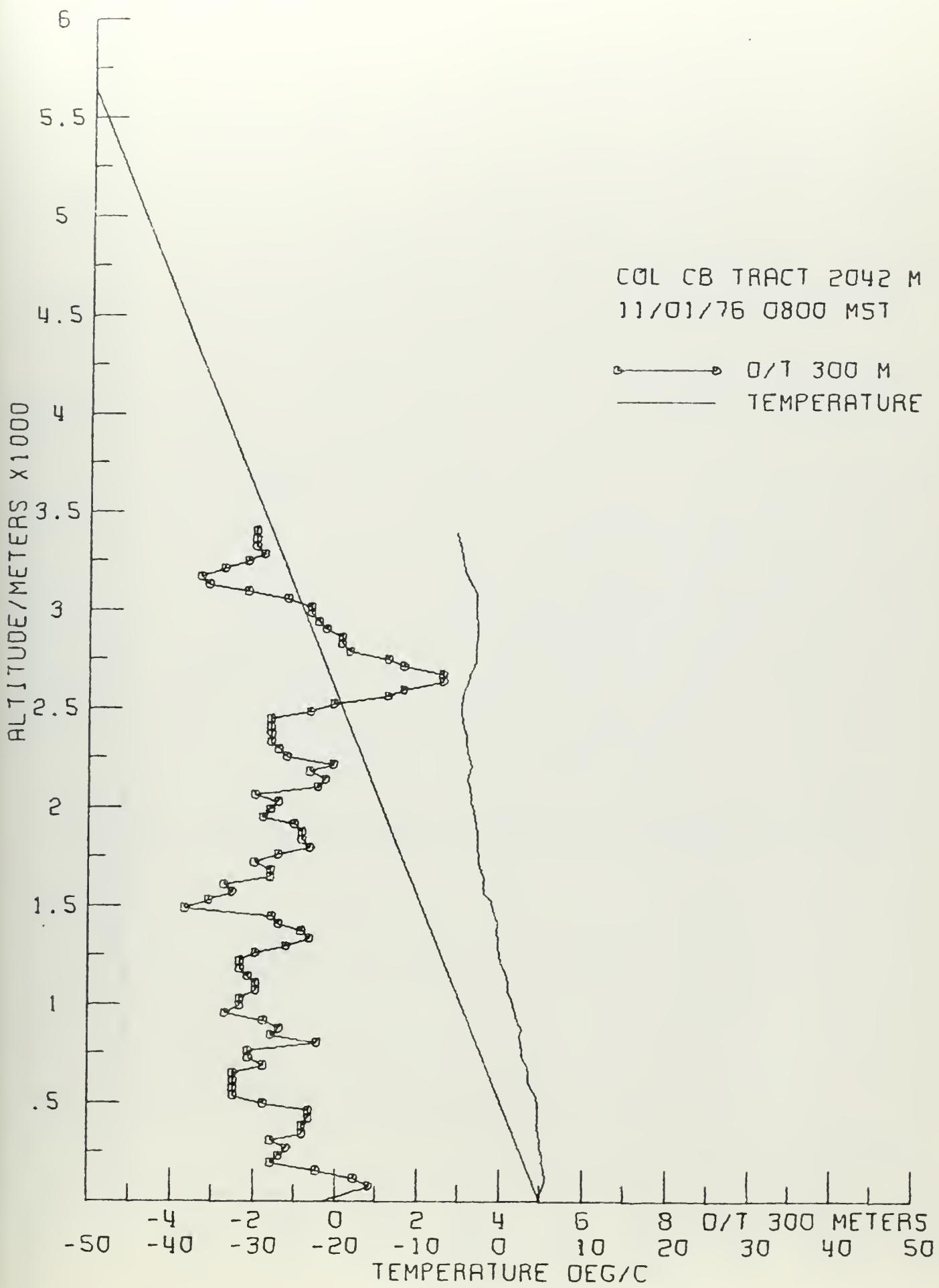
COL CB TRACT

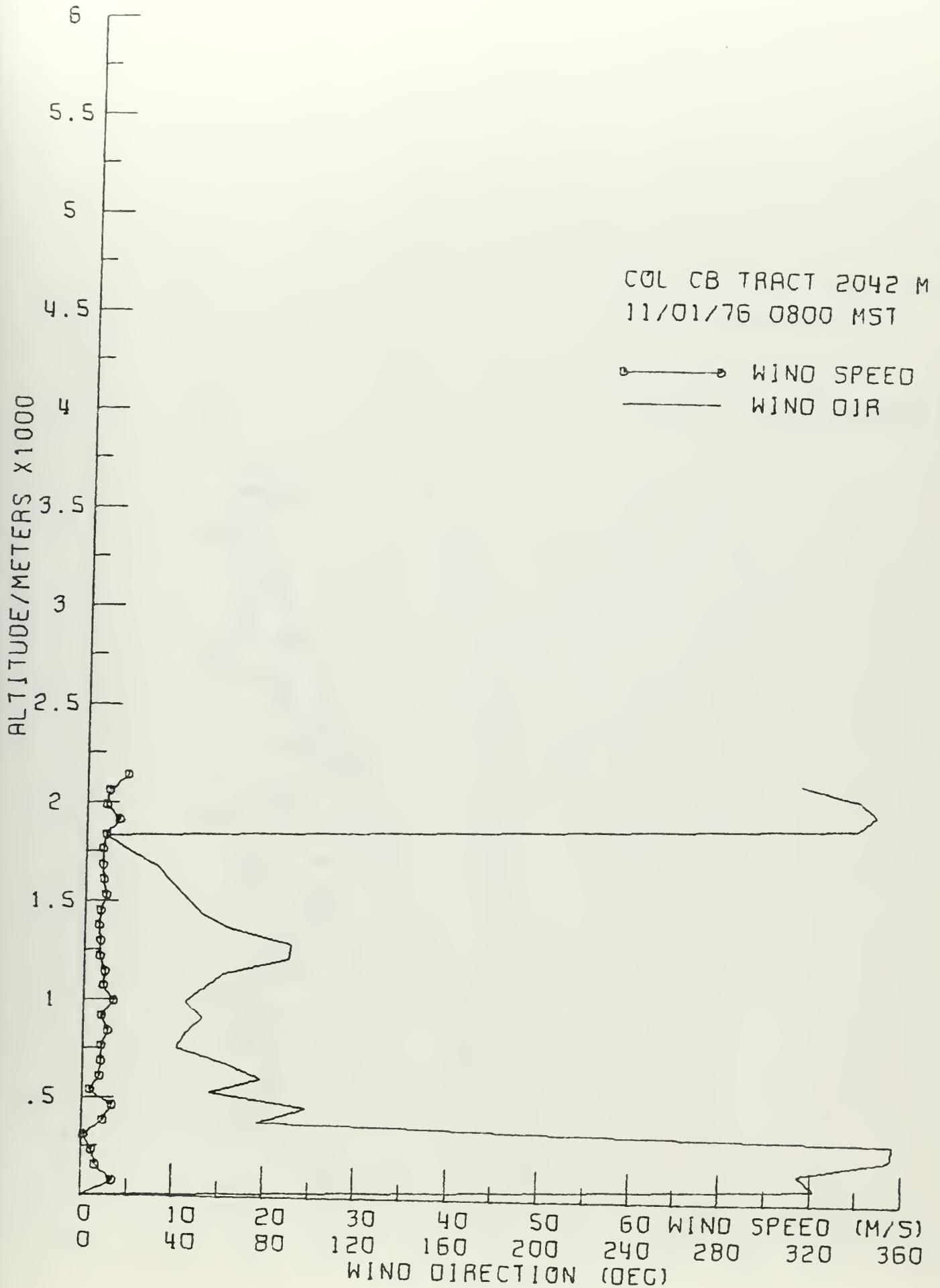
ELEV 2042 METERS

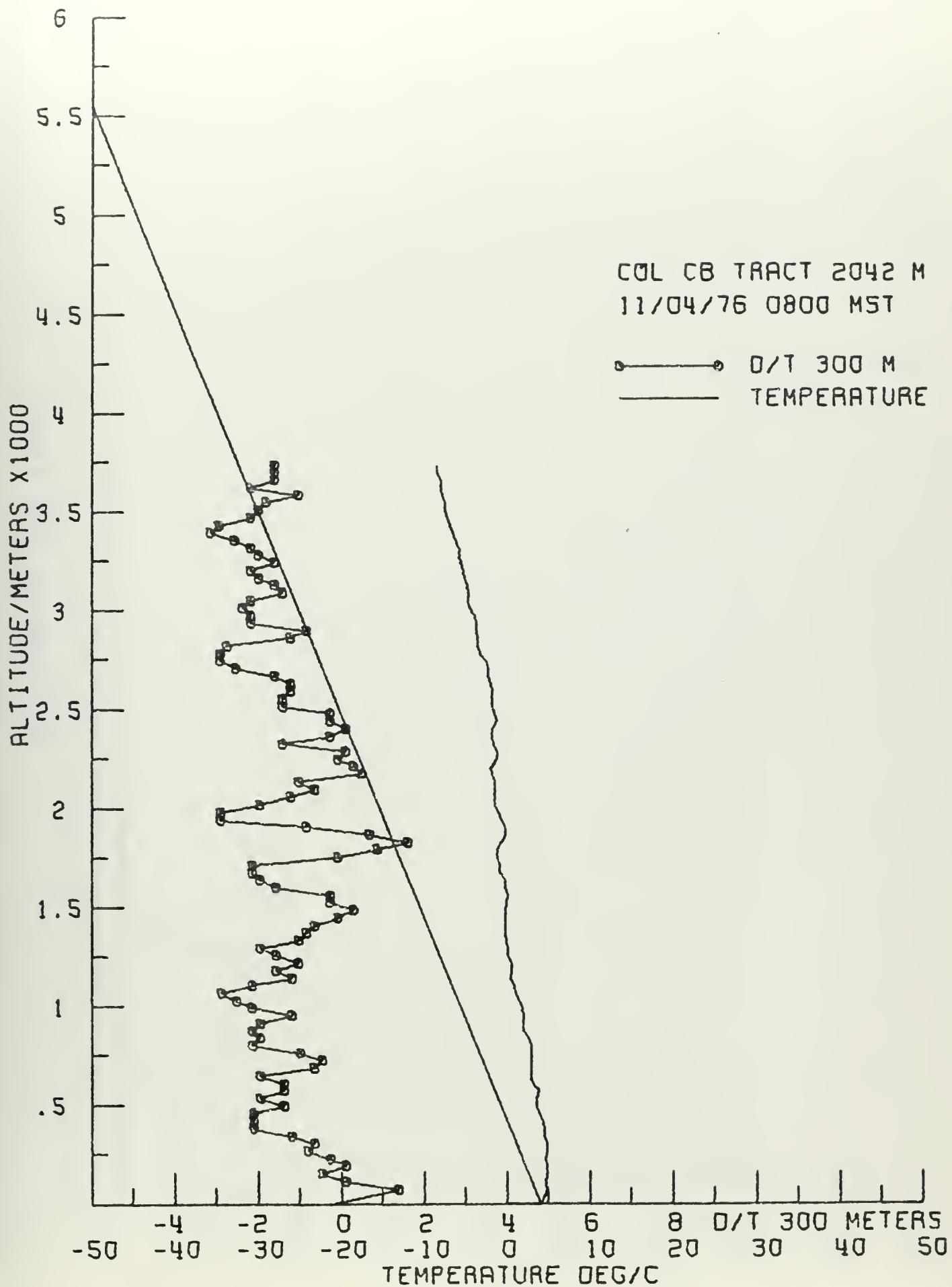
SOUNDING ID 2863

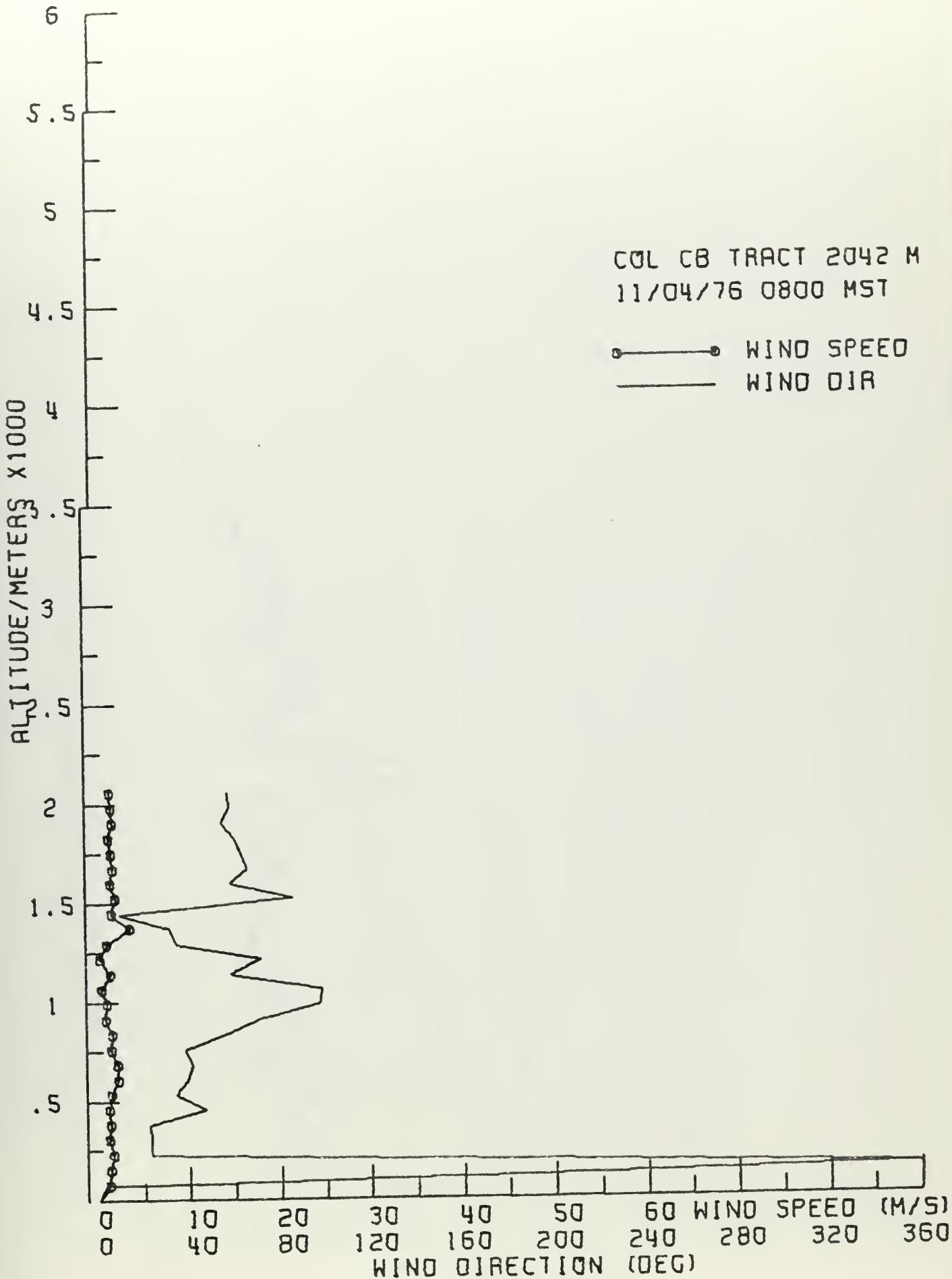
TE 11/30/76 TIME 13:30MST ASCENT RATE 500 FPM DATA INTERVAL 15 SEC.

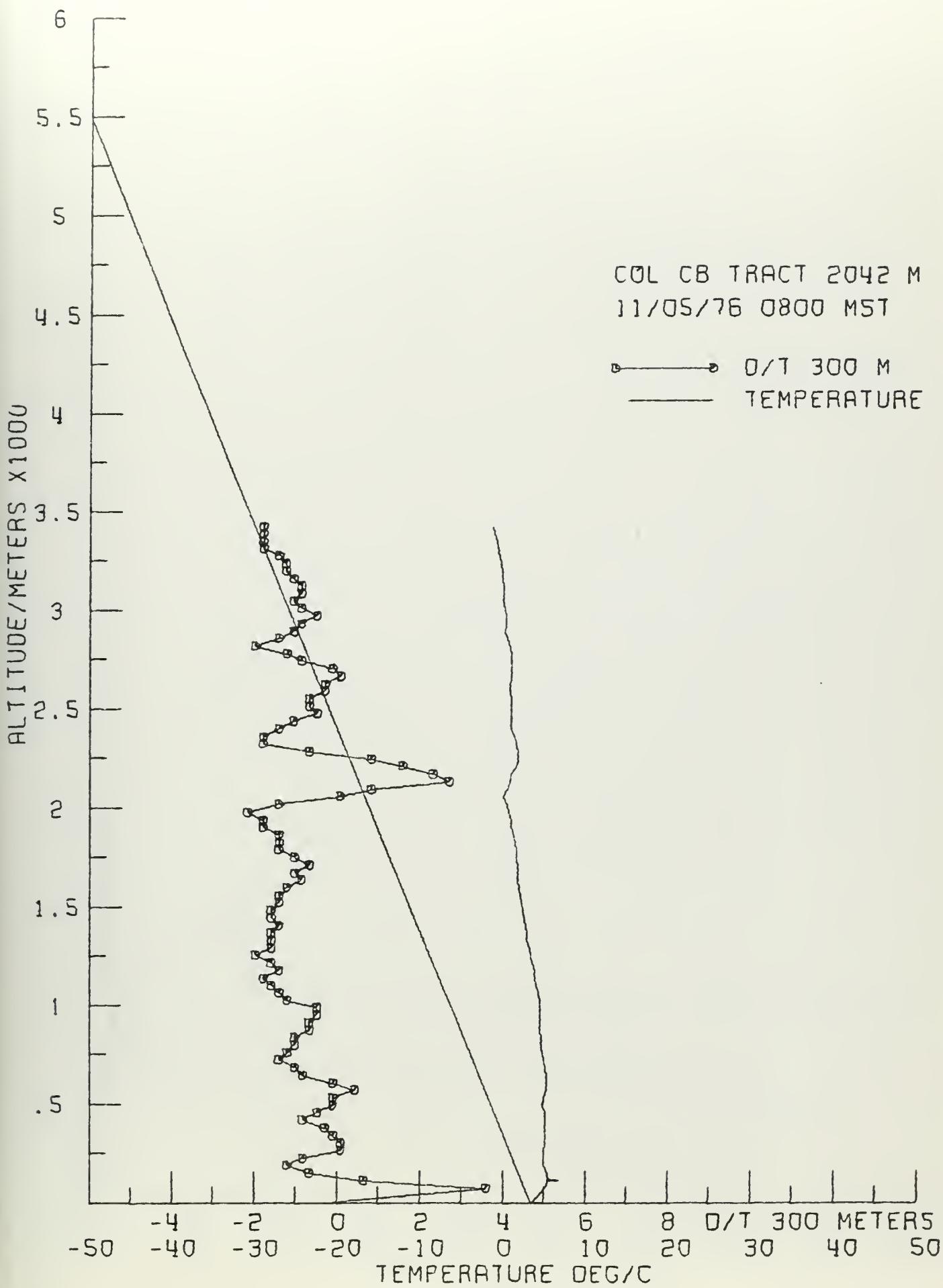
TIME MIN	HEIGHT M (AGL)	HEIGHT M (MSL)	U-COMP M/S	V-COMP M/S	WND SPEED M/S	WND DIR DEG
0.0	0.	2042.	0.0	0.0	0.0	0.

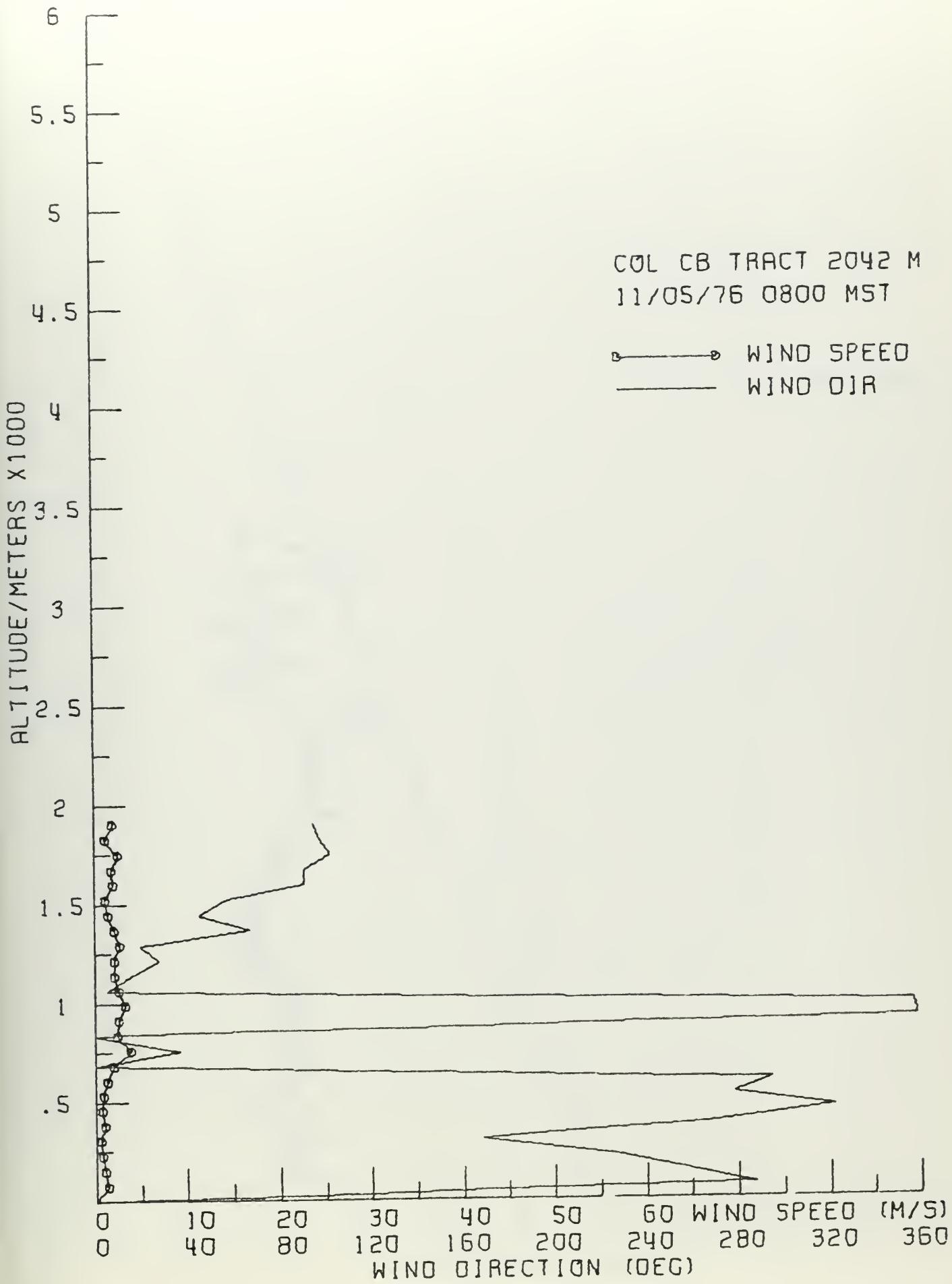


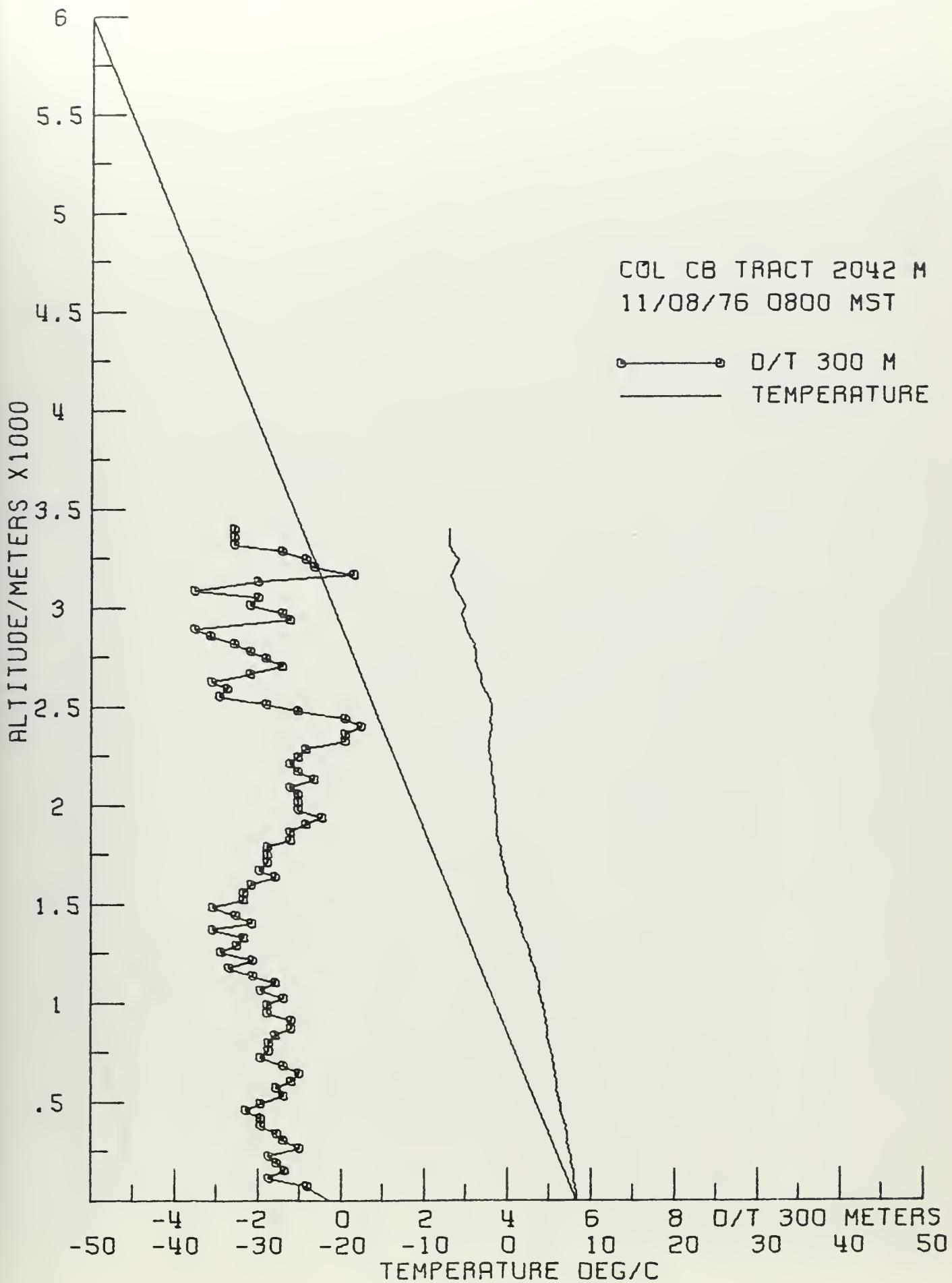


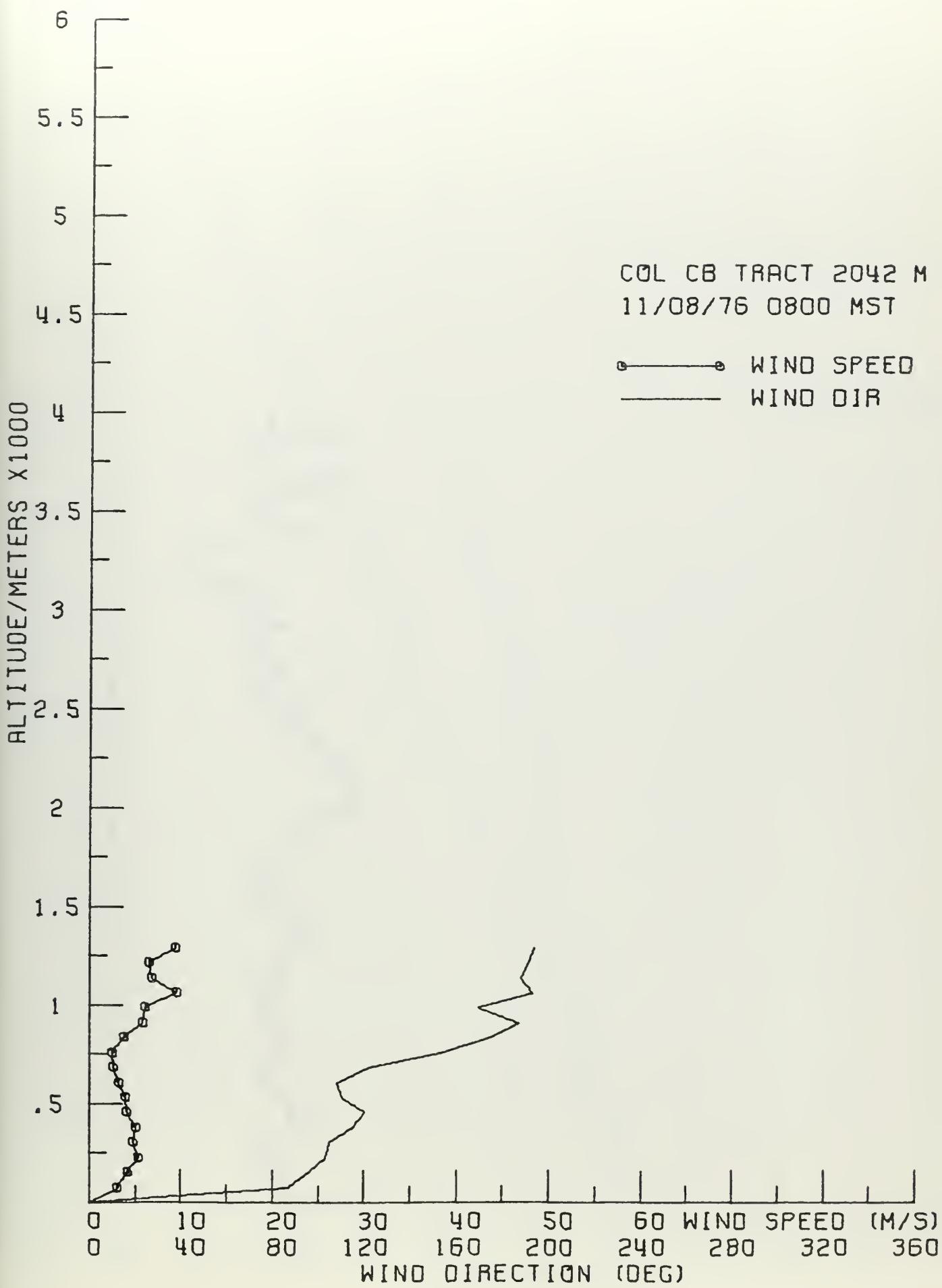


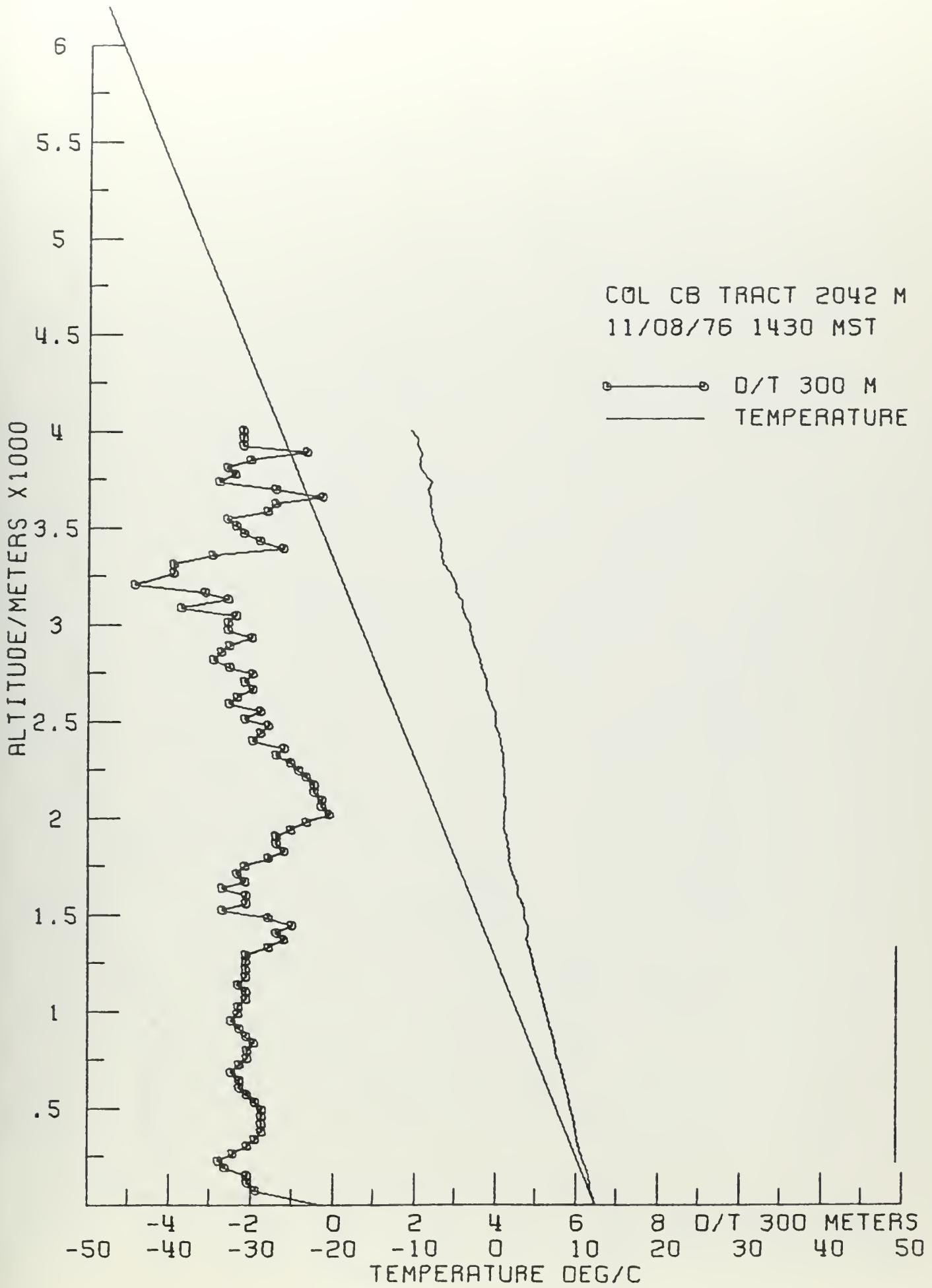


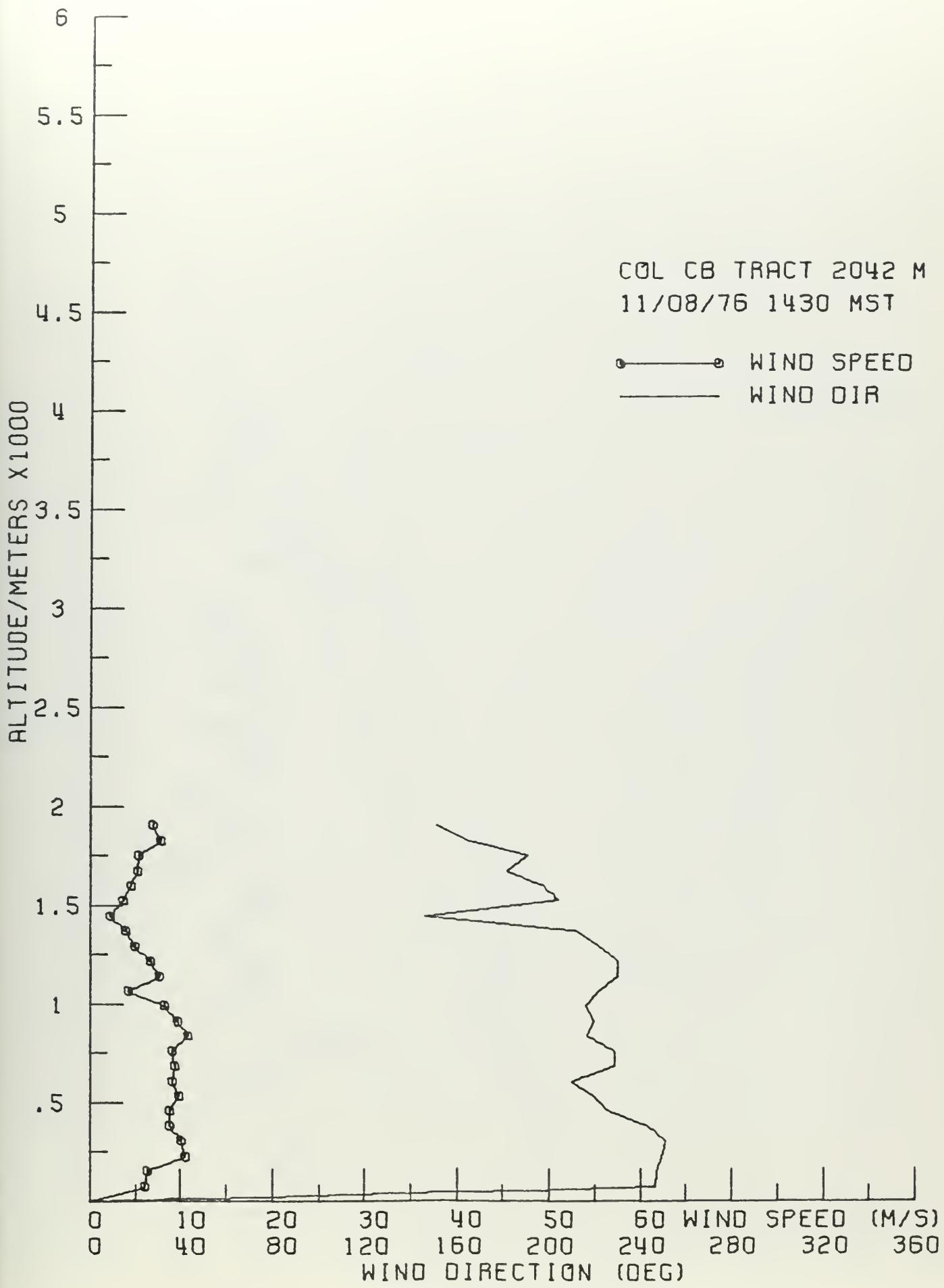




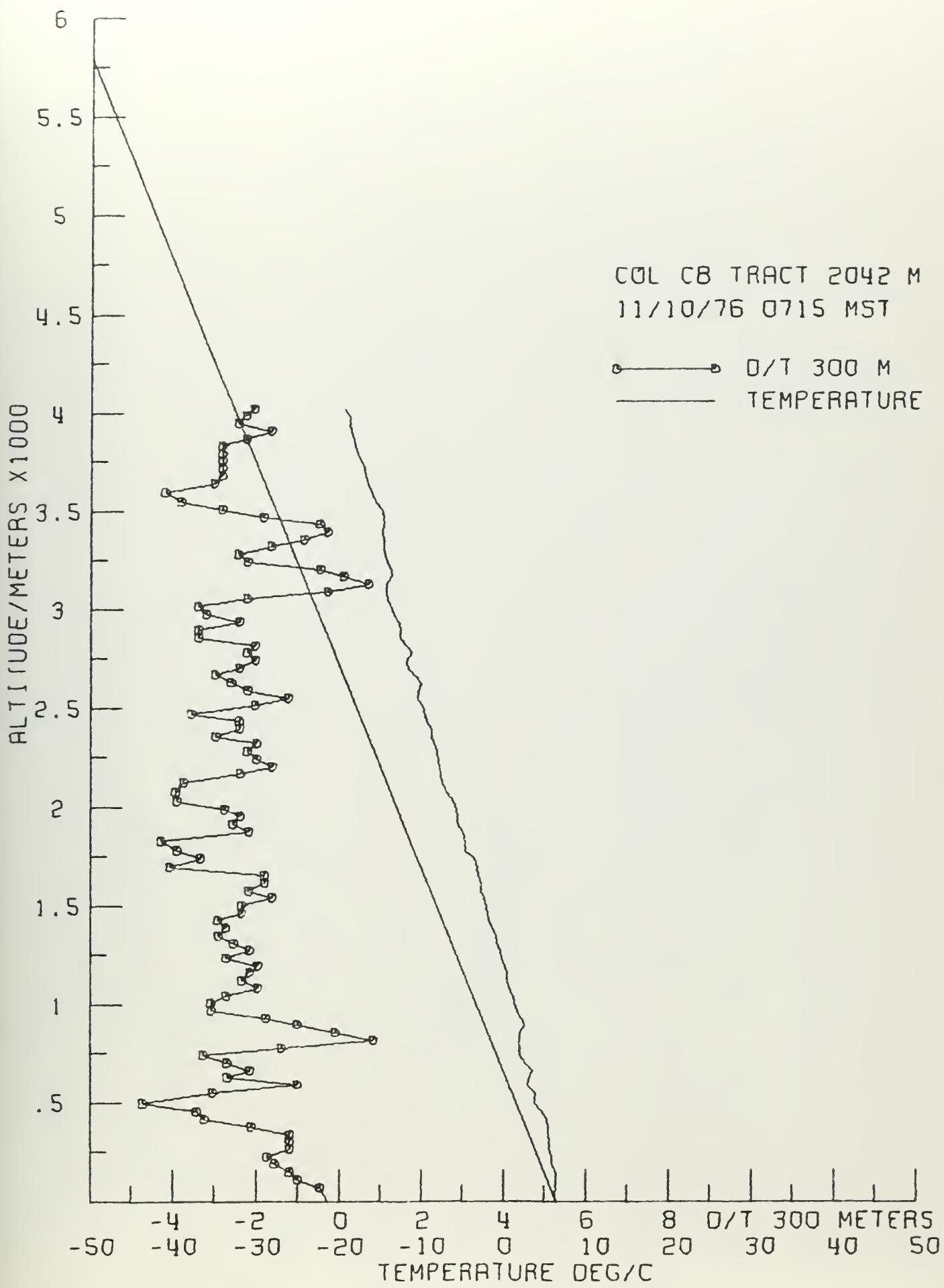


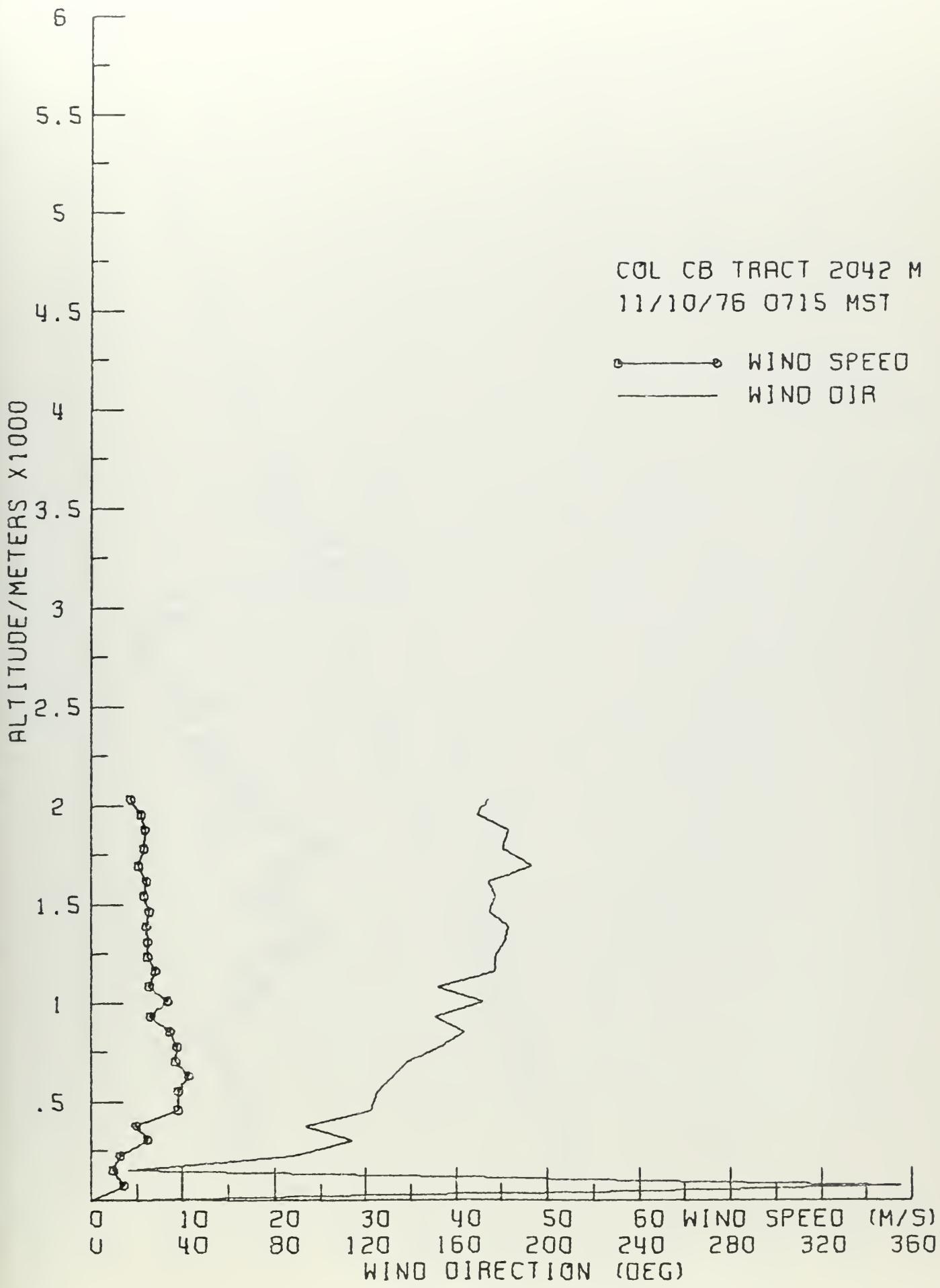




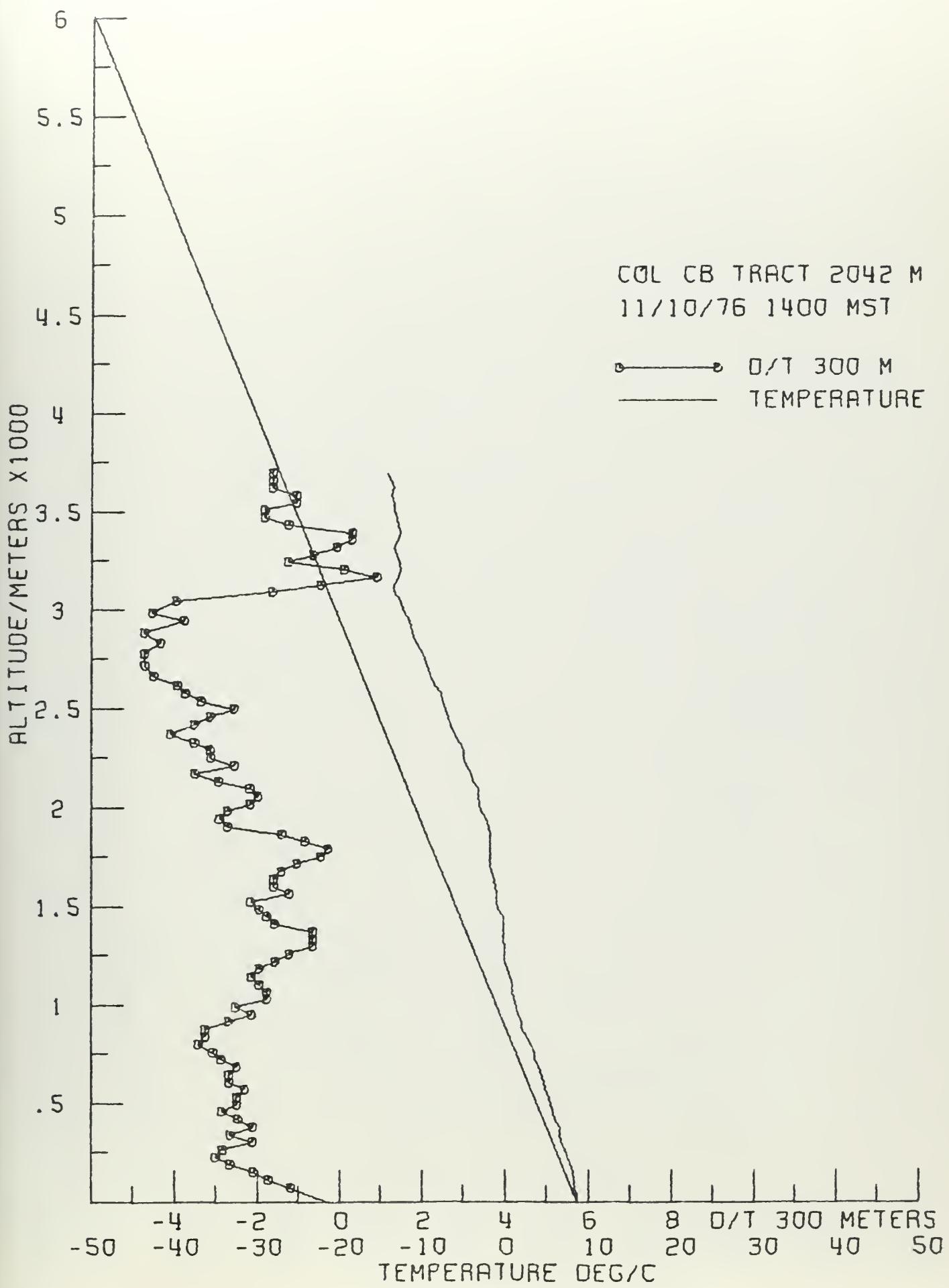


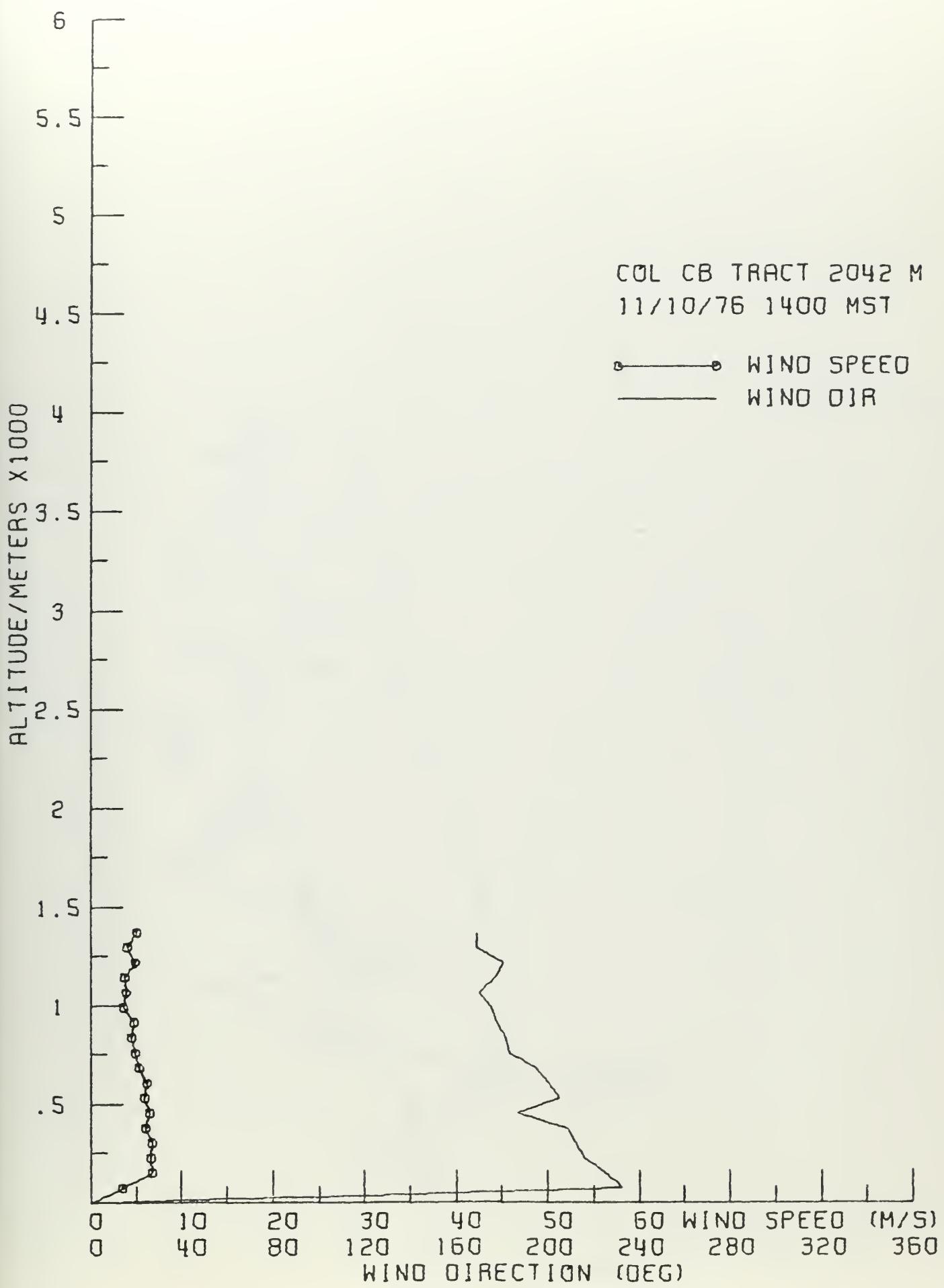


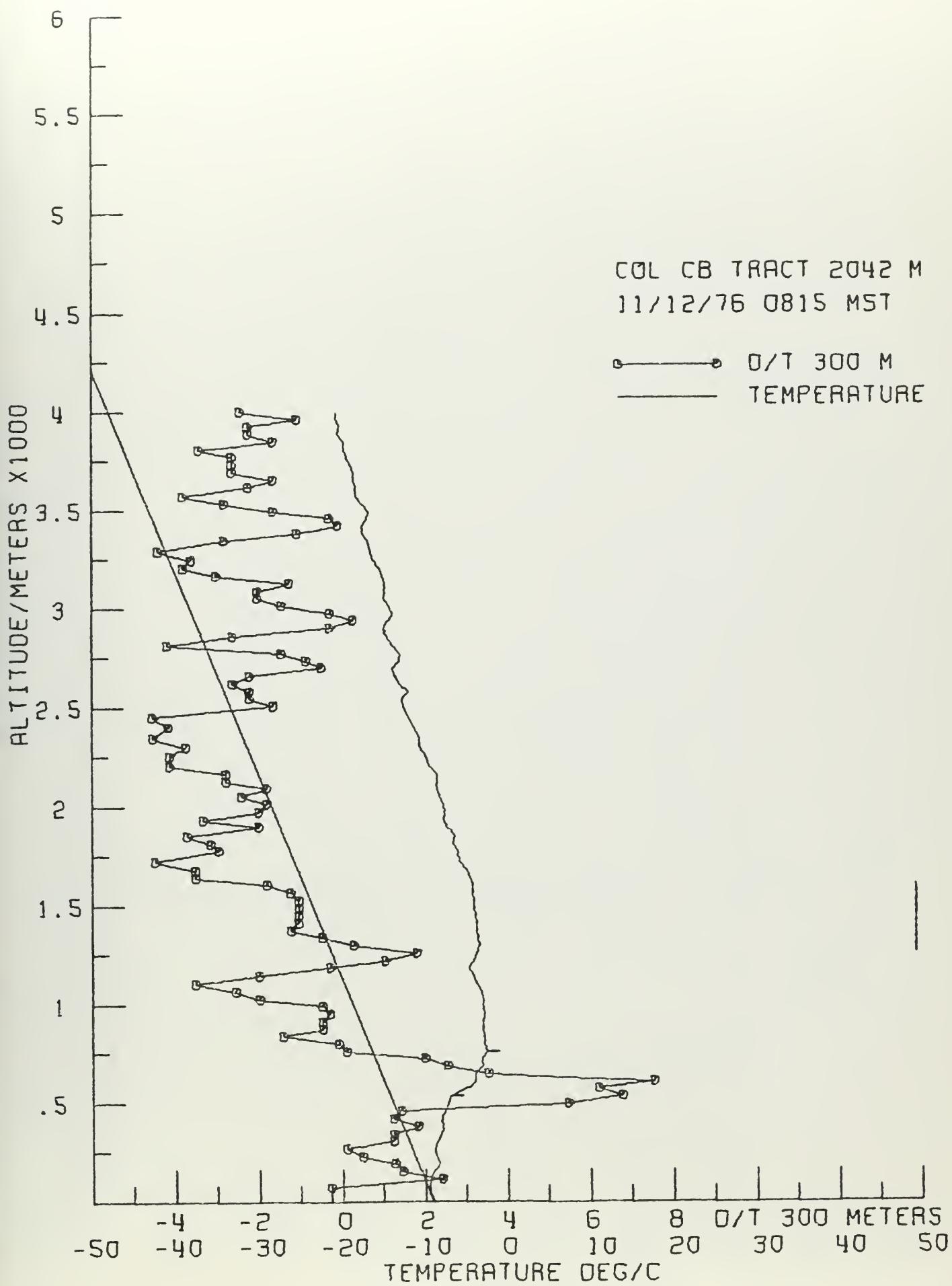


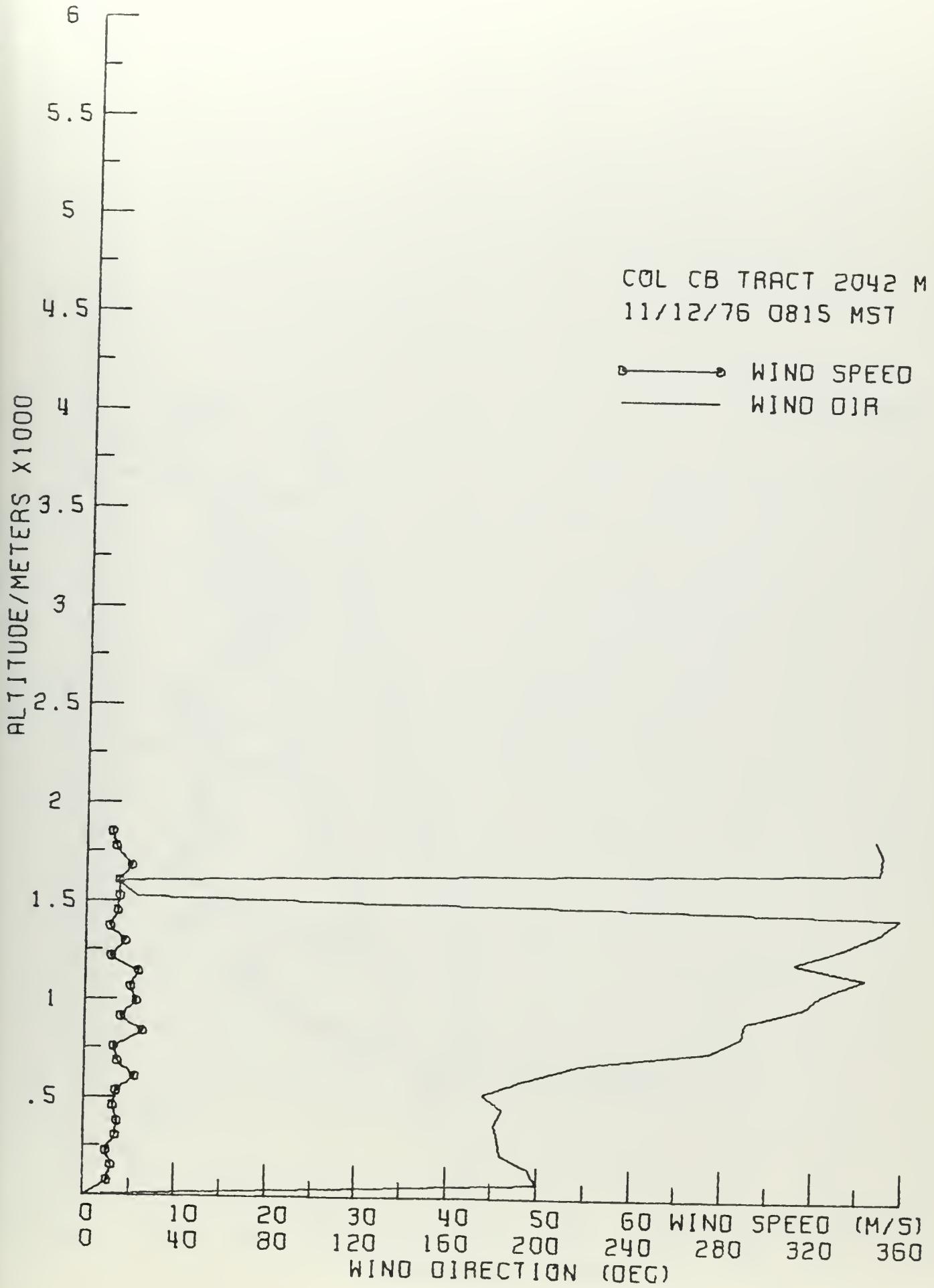


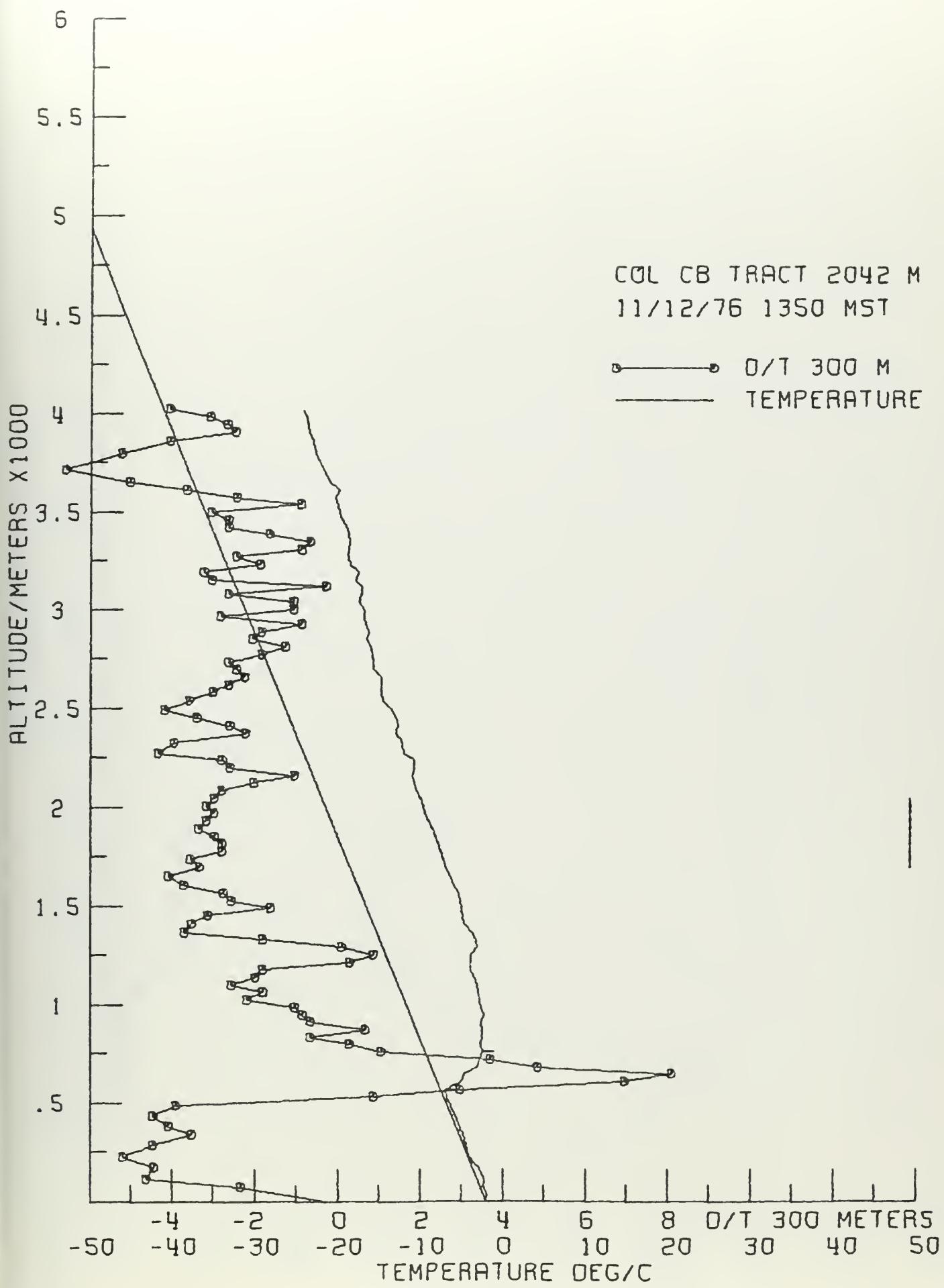


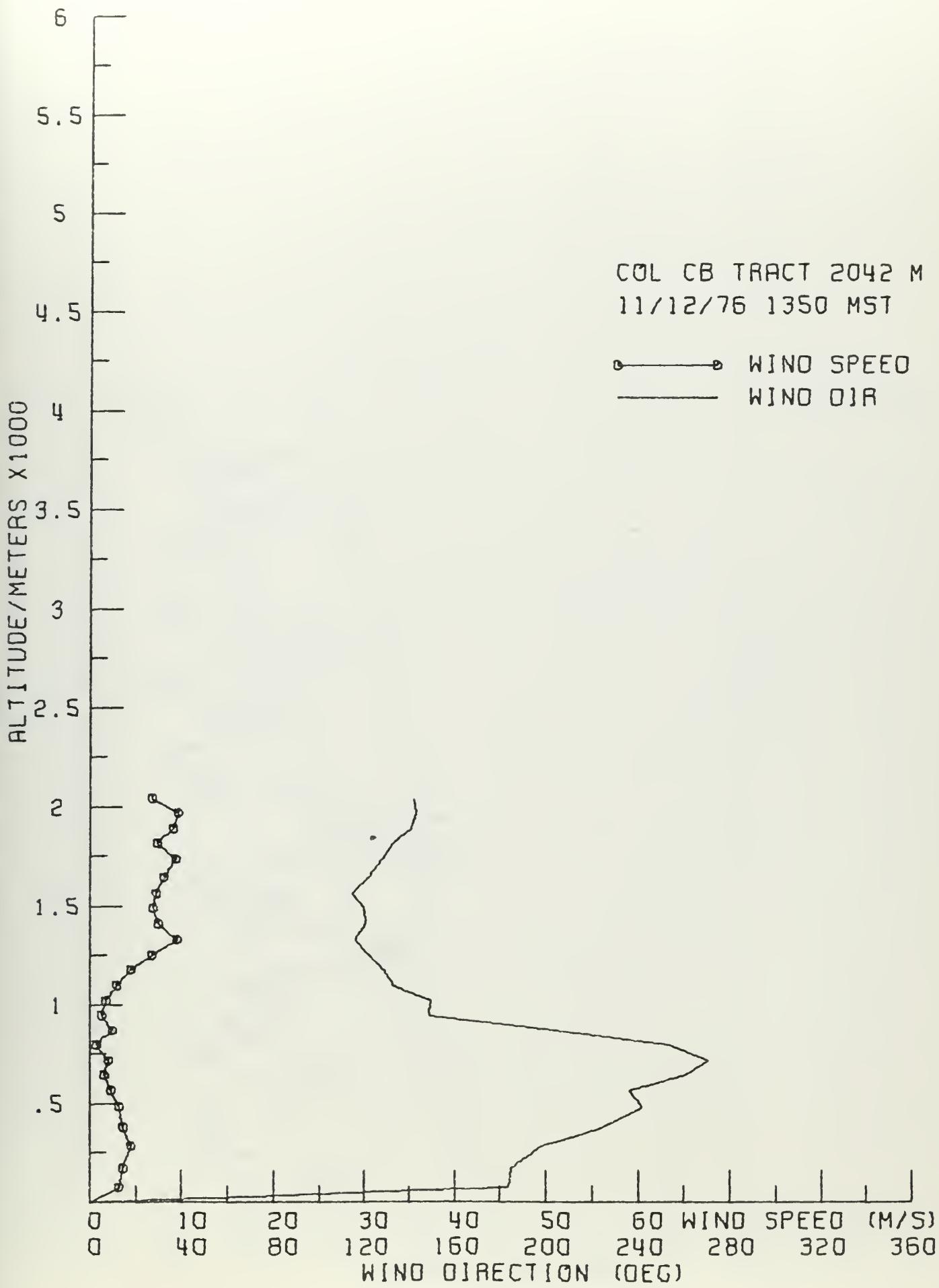


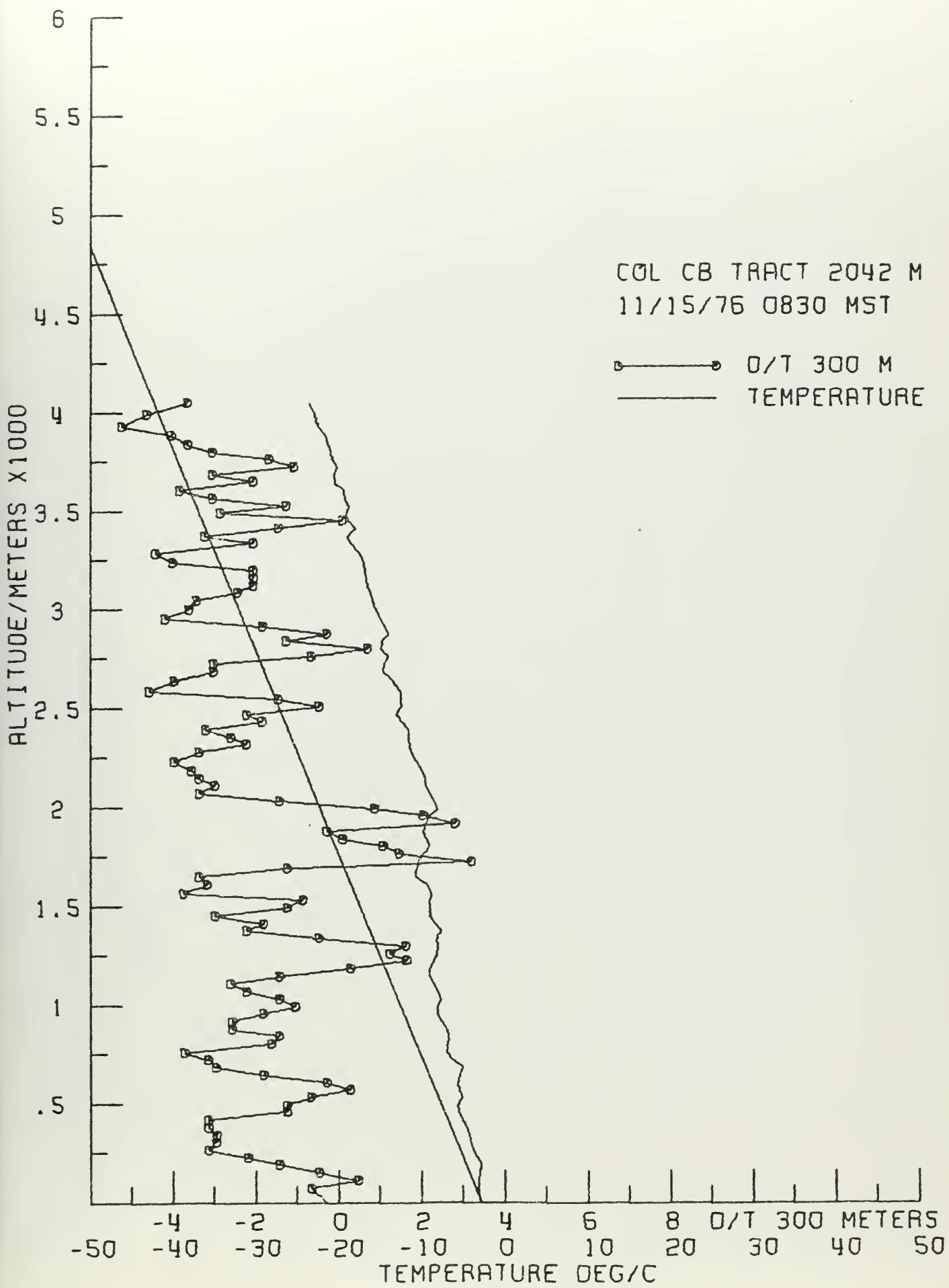


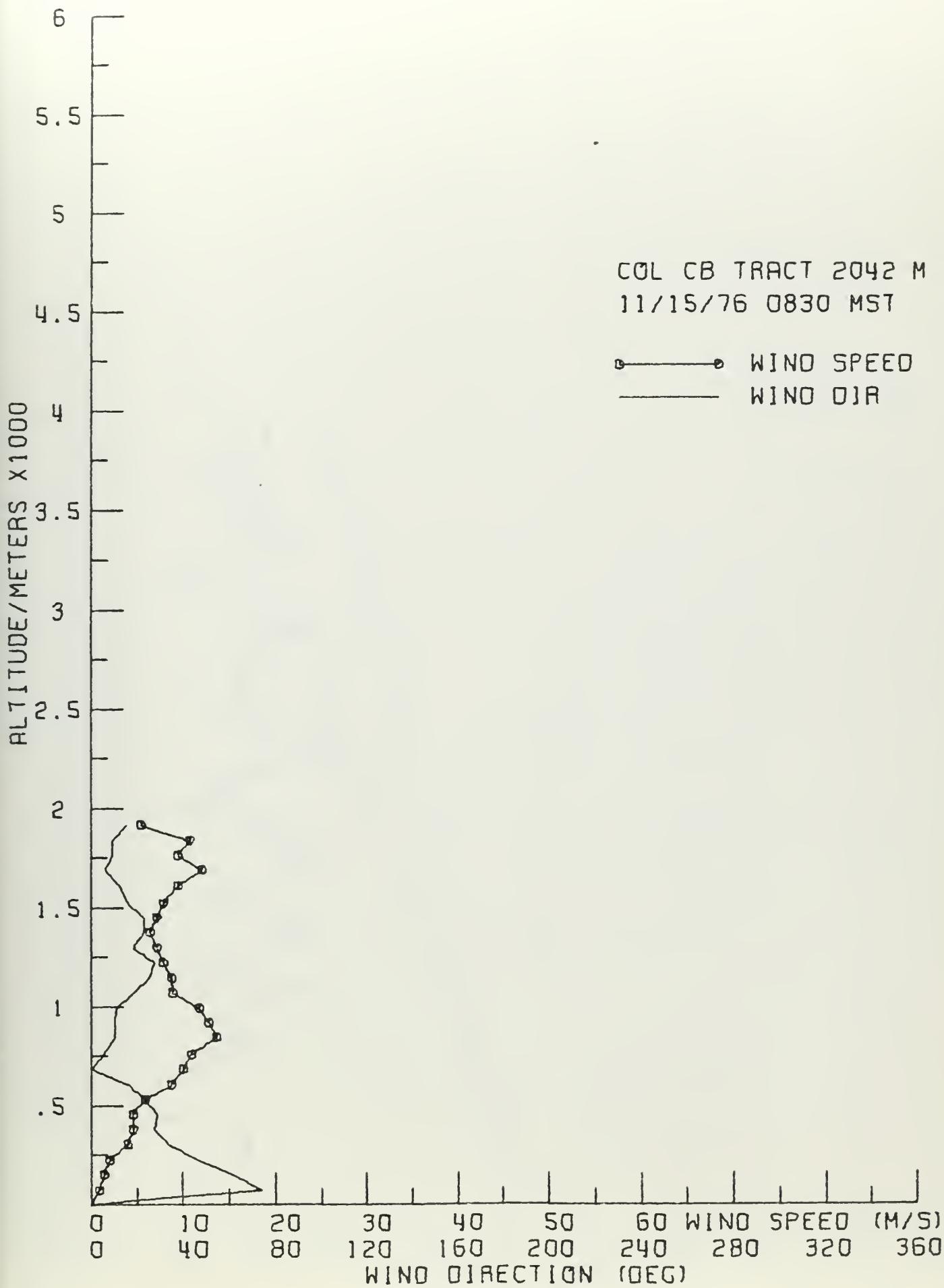


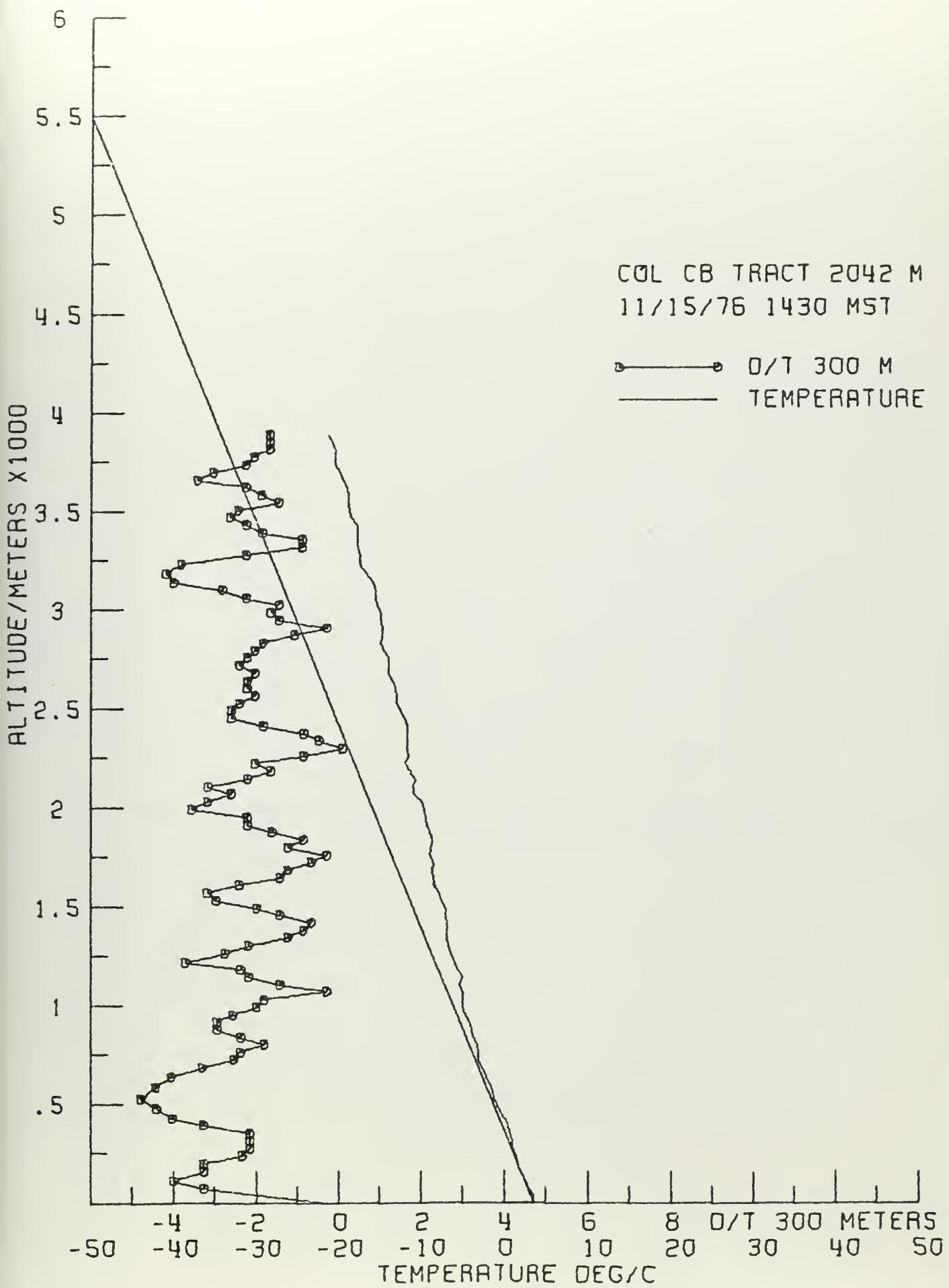


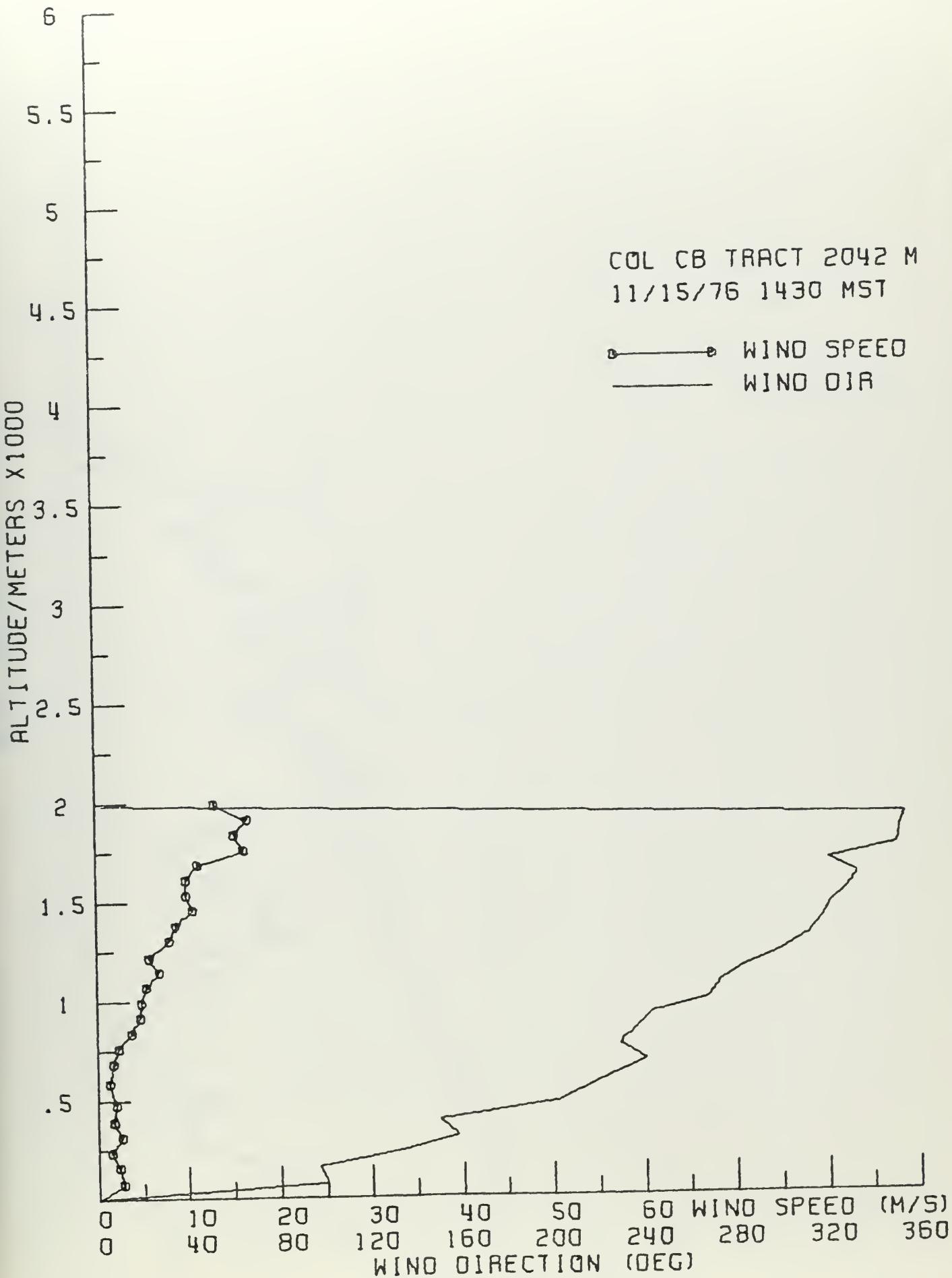


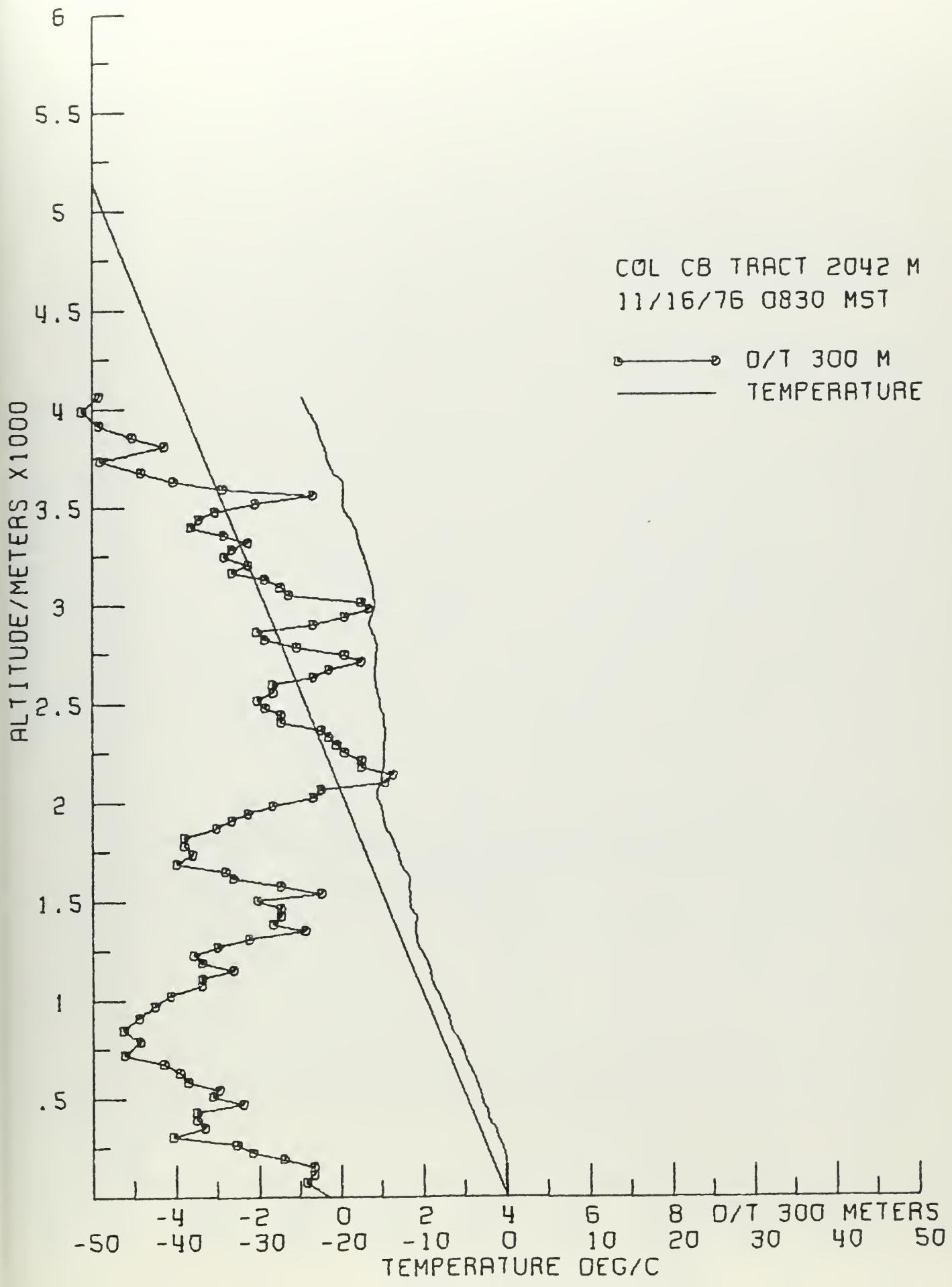


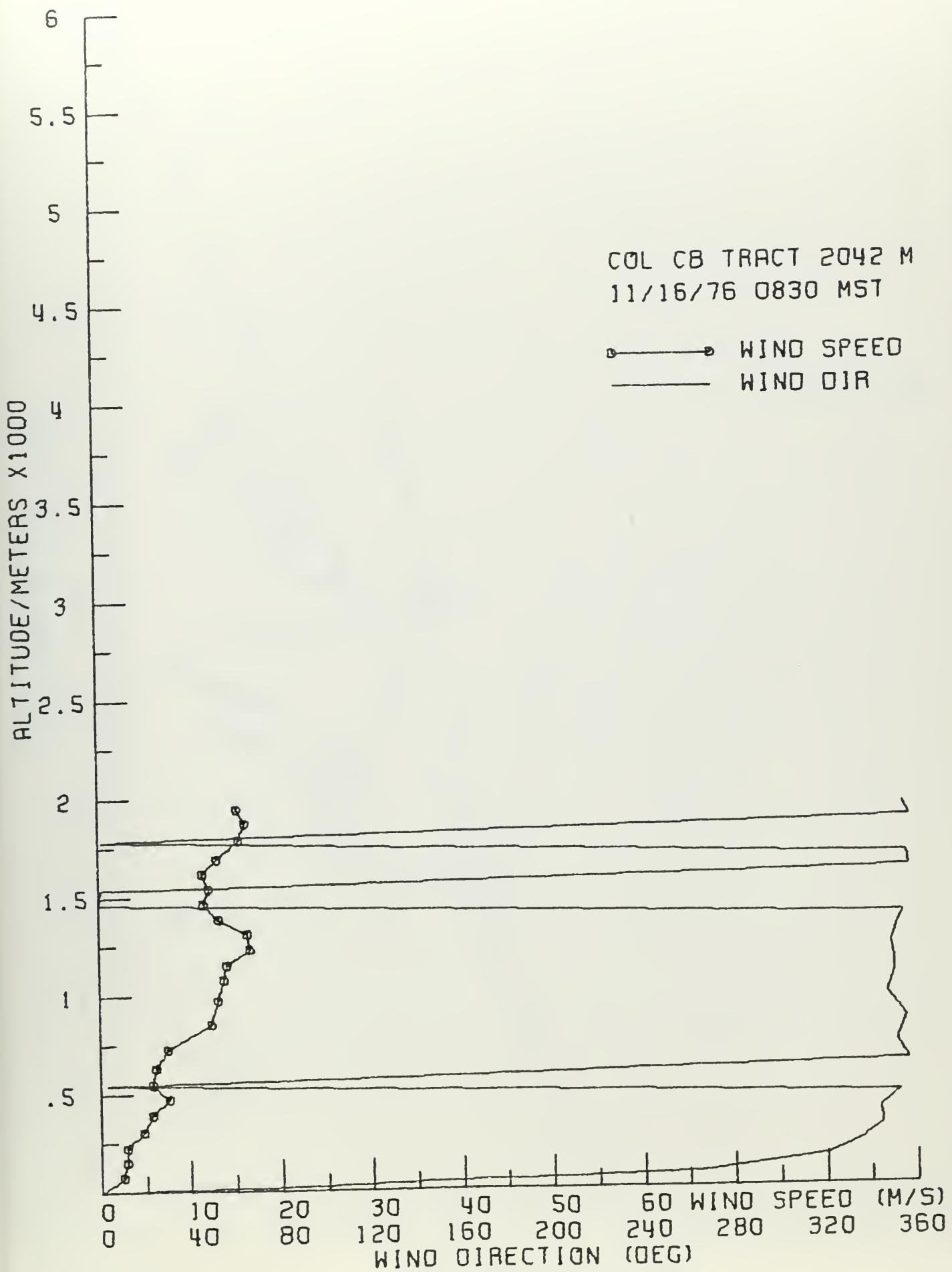


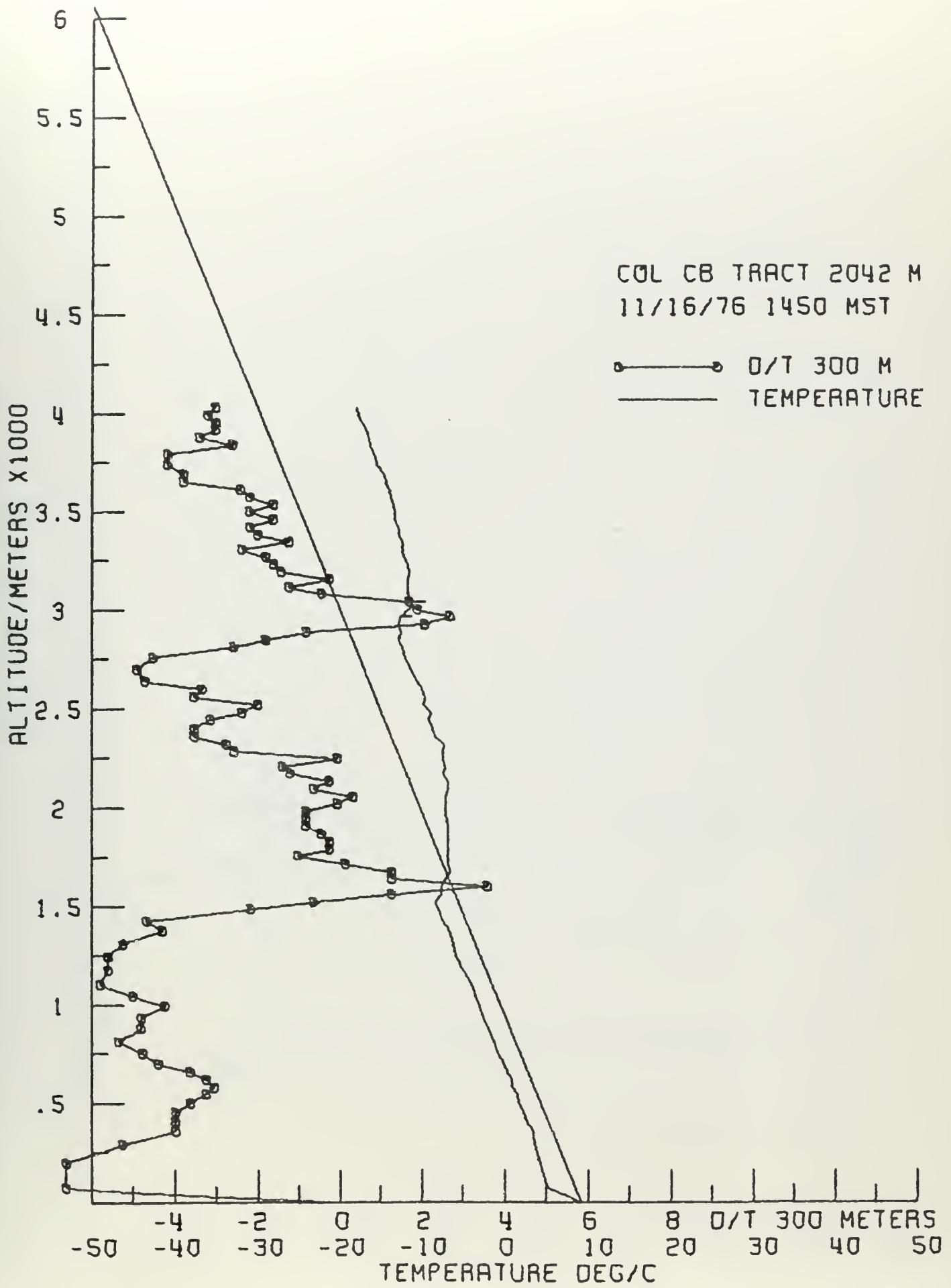


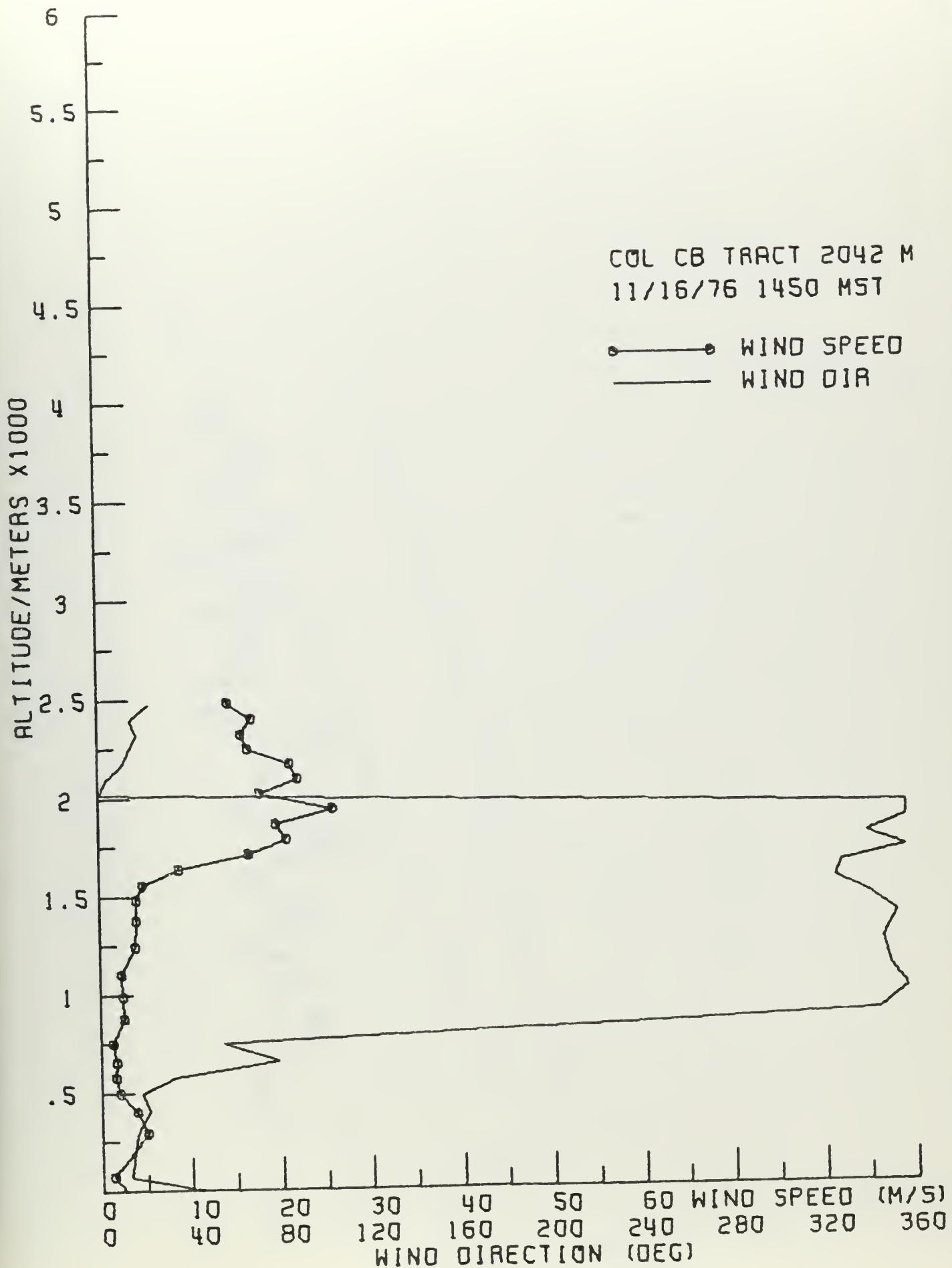


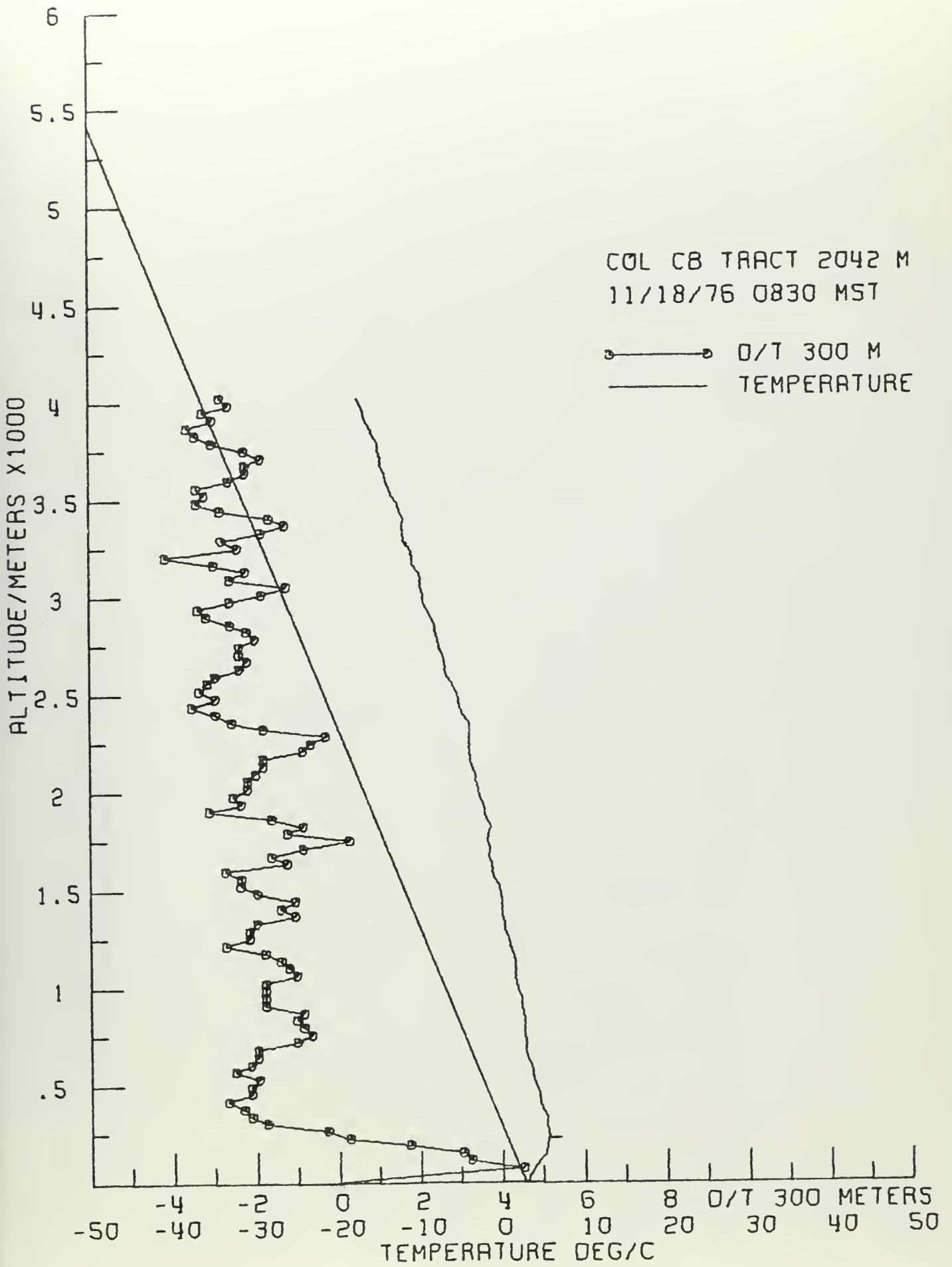


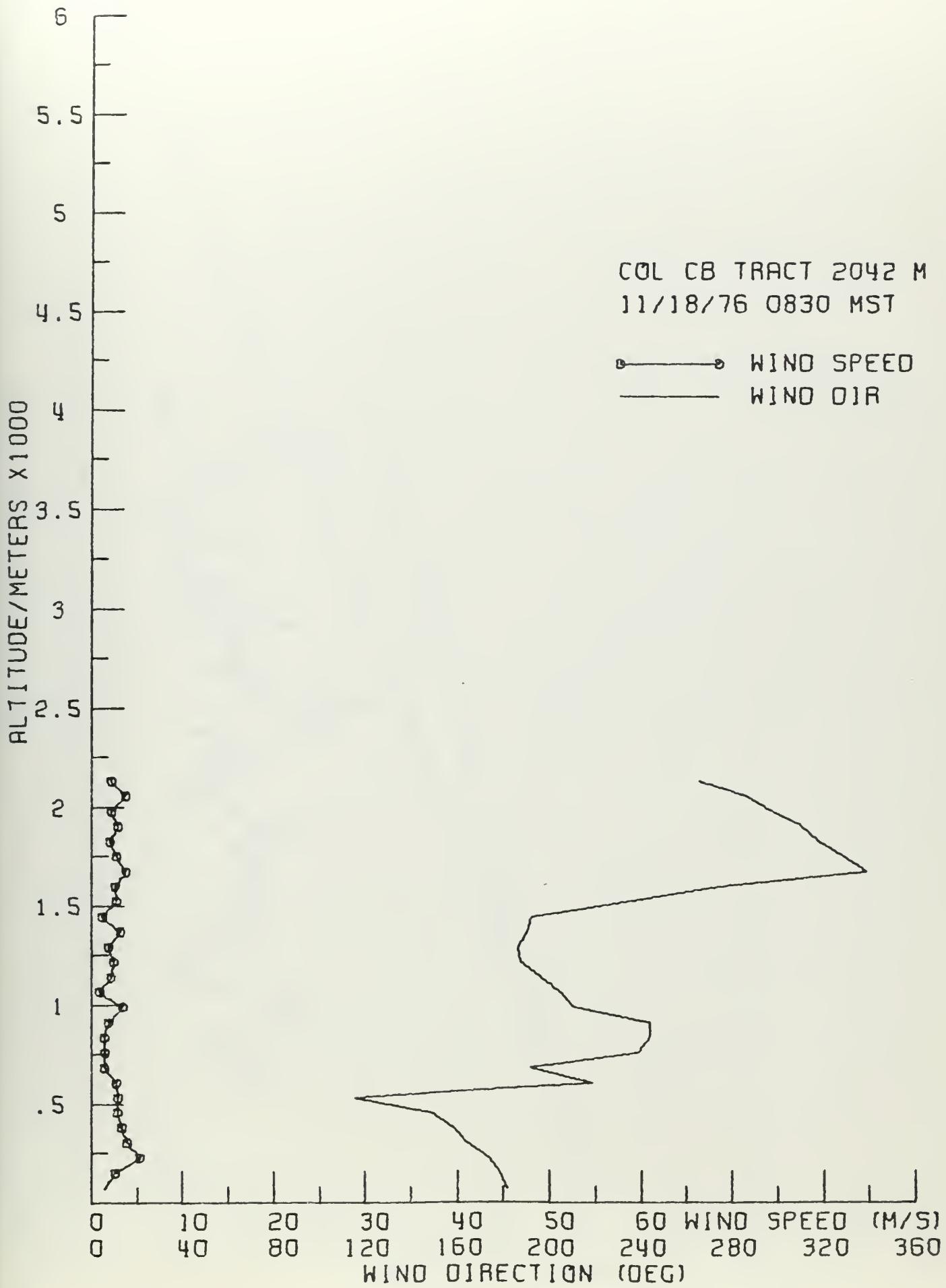


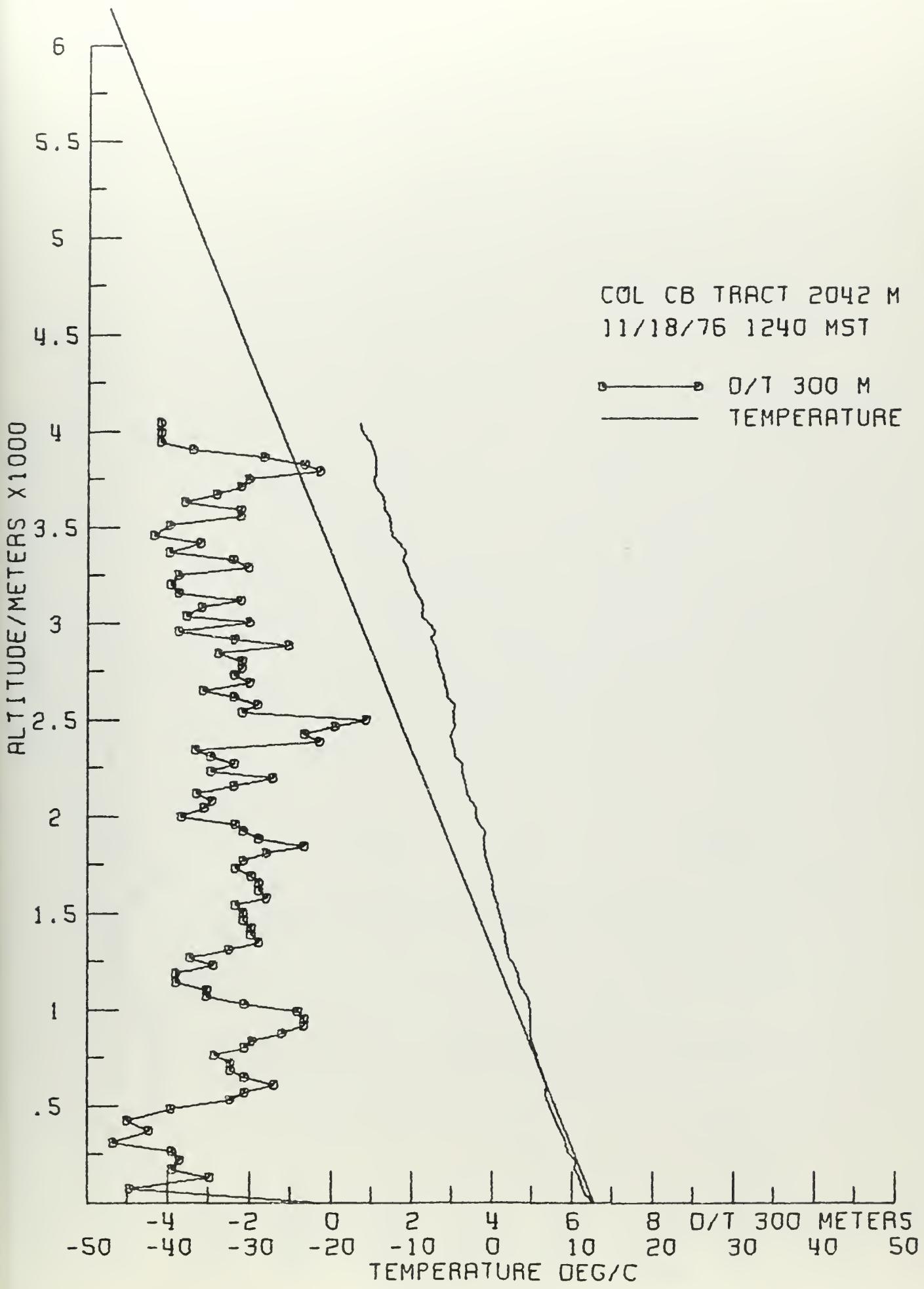


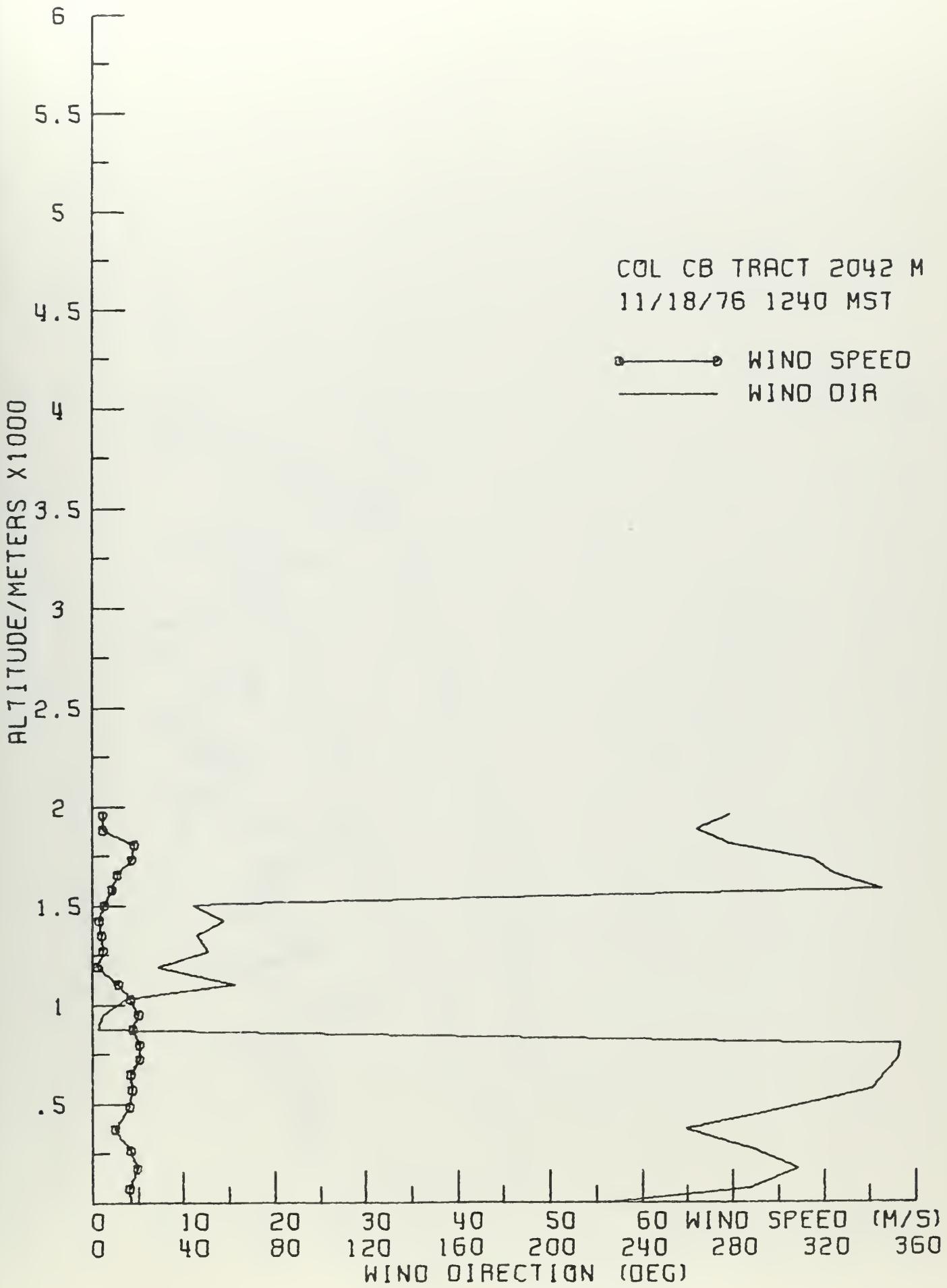


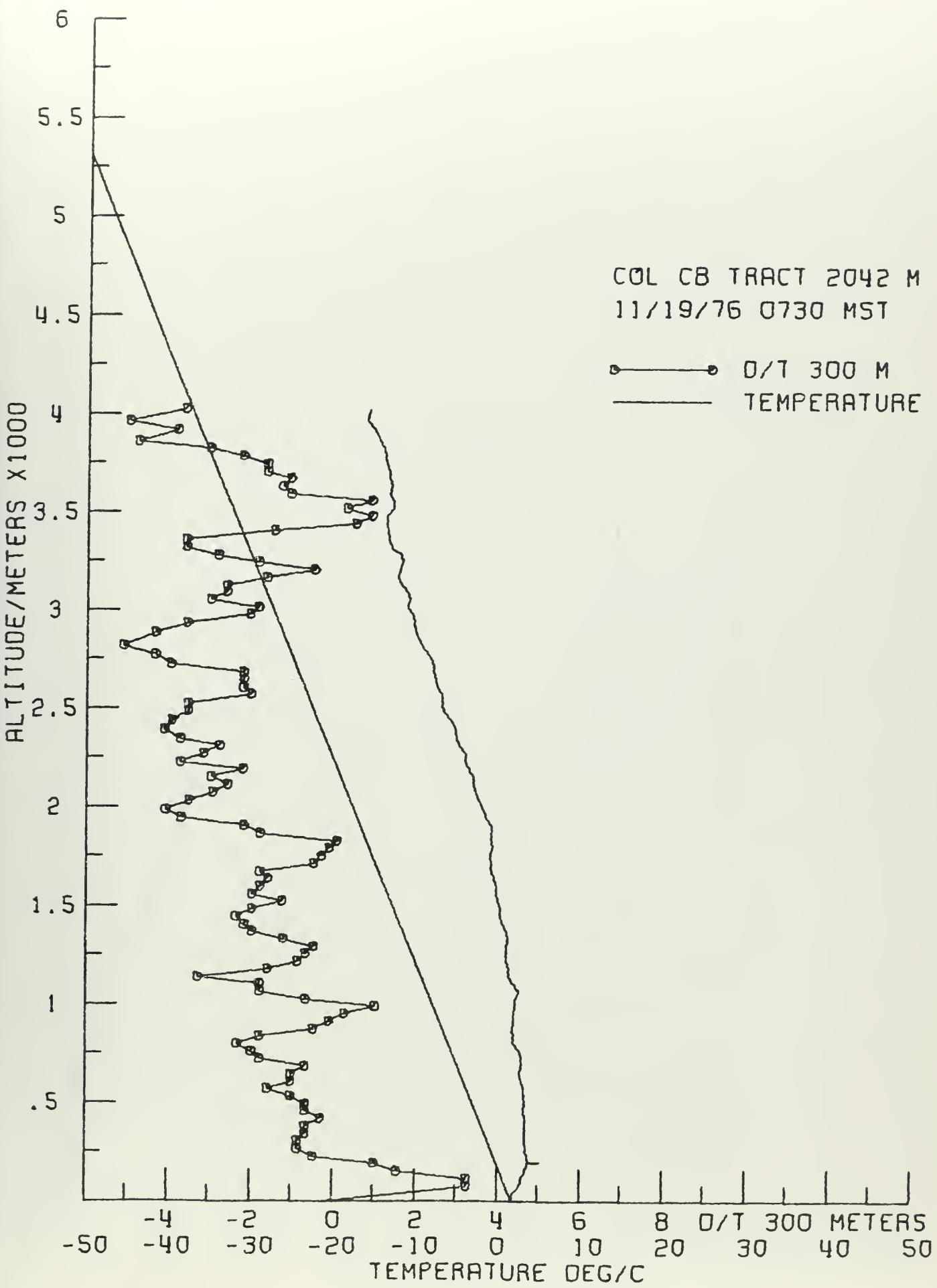


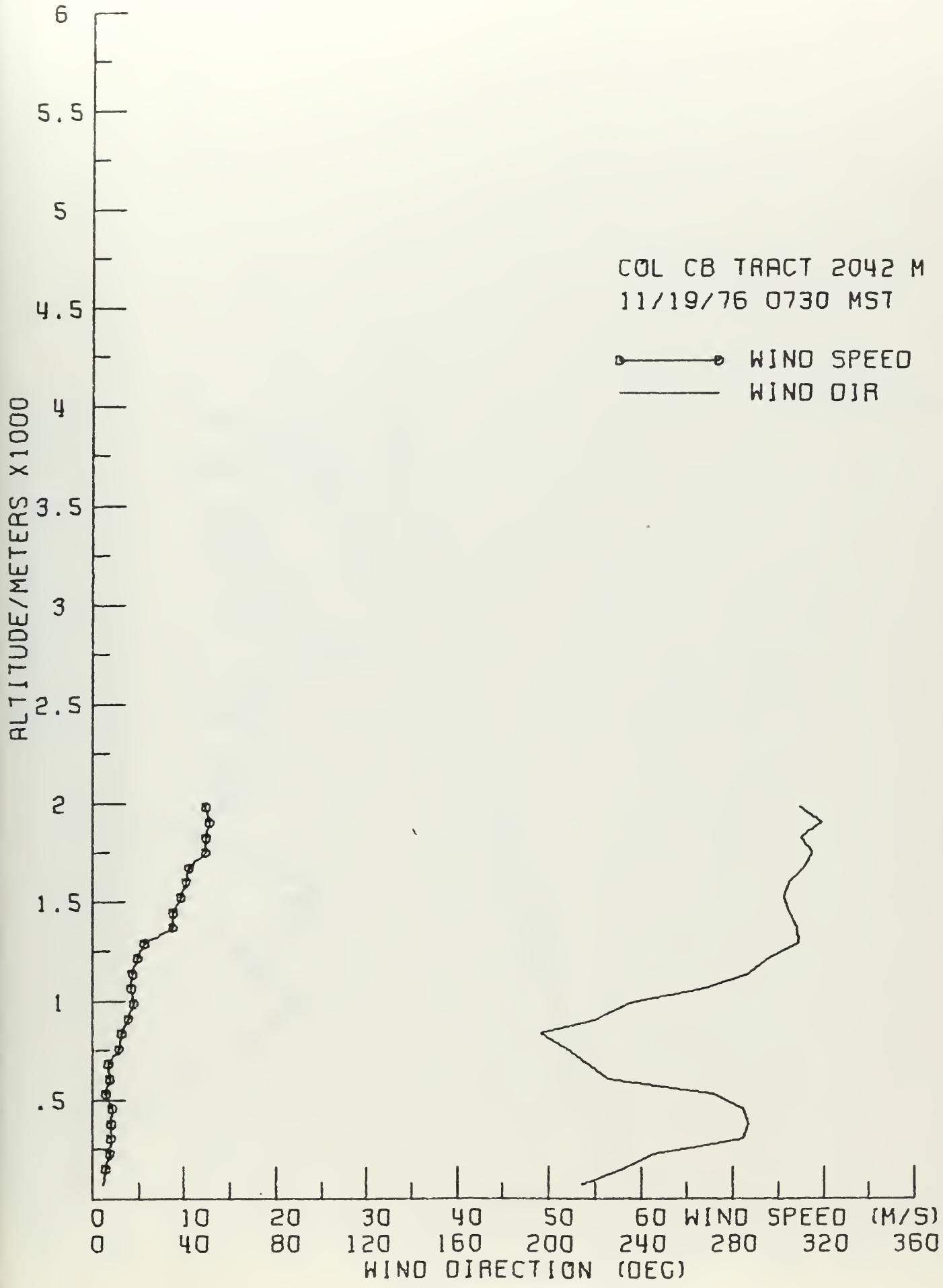


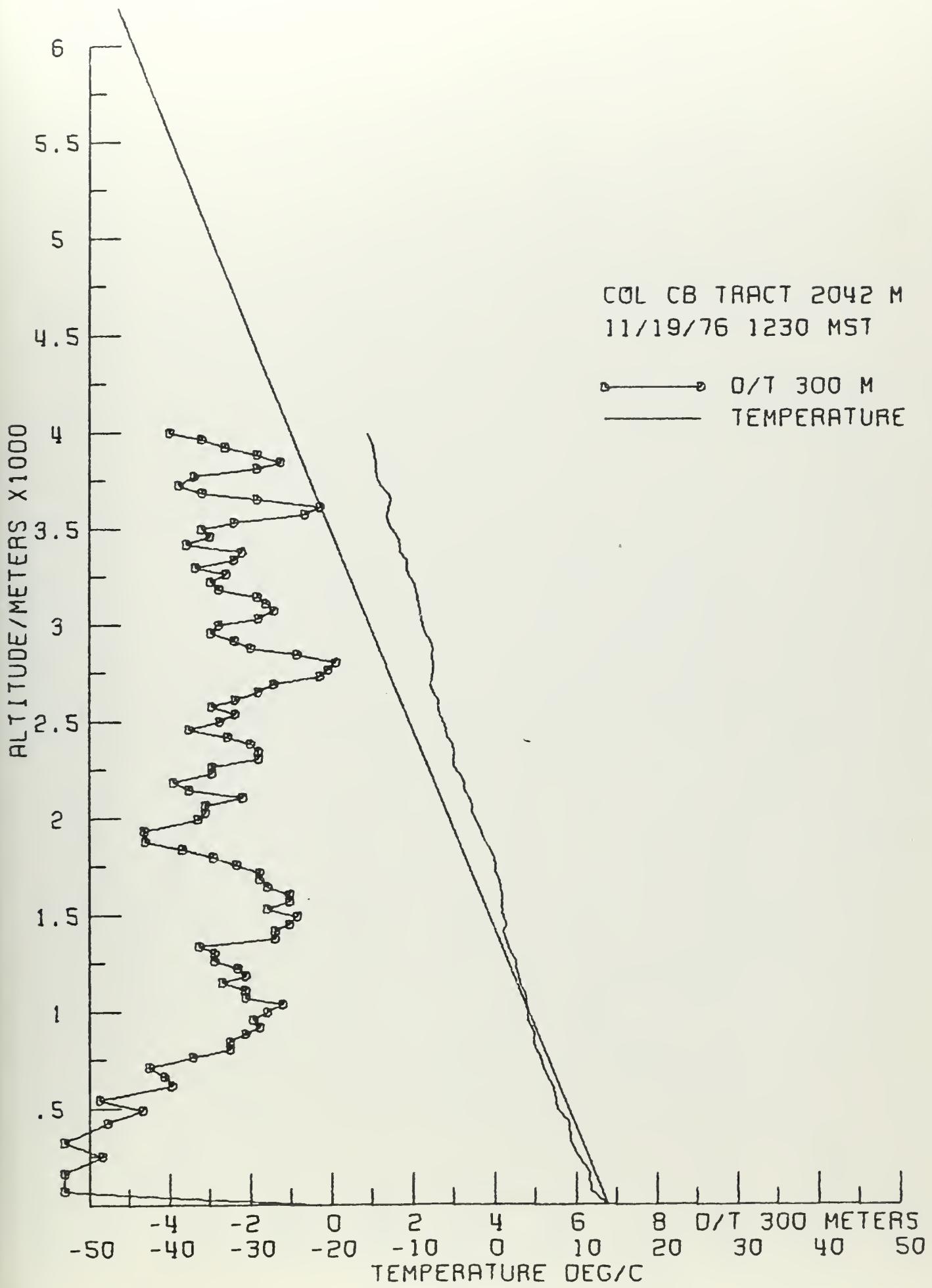


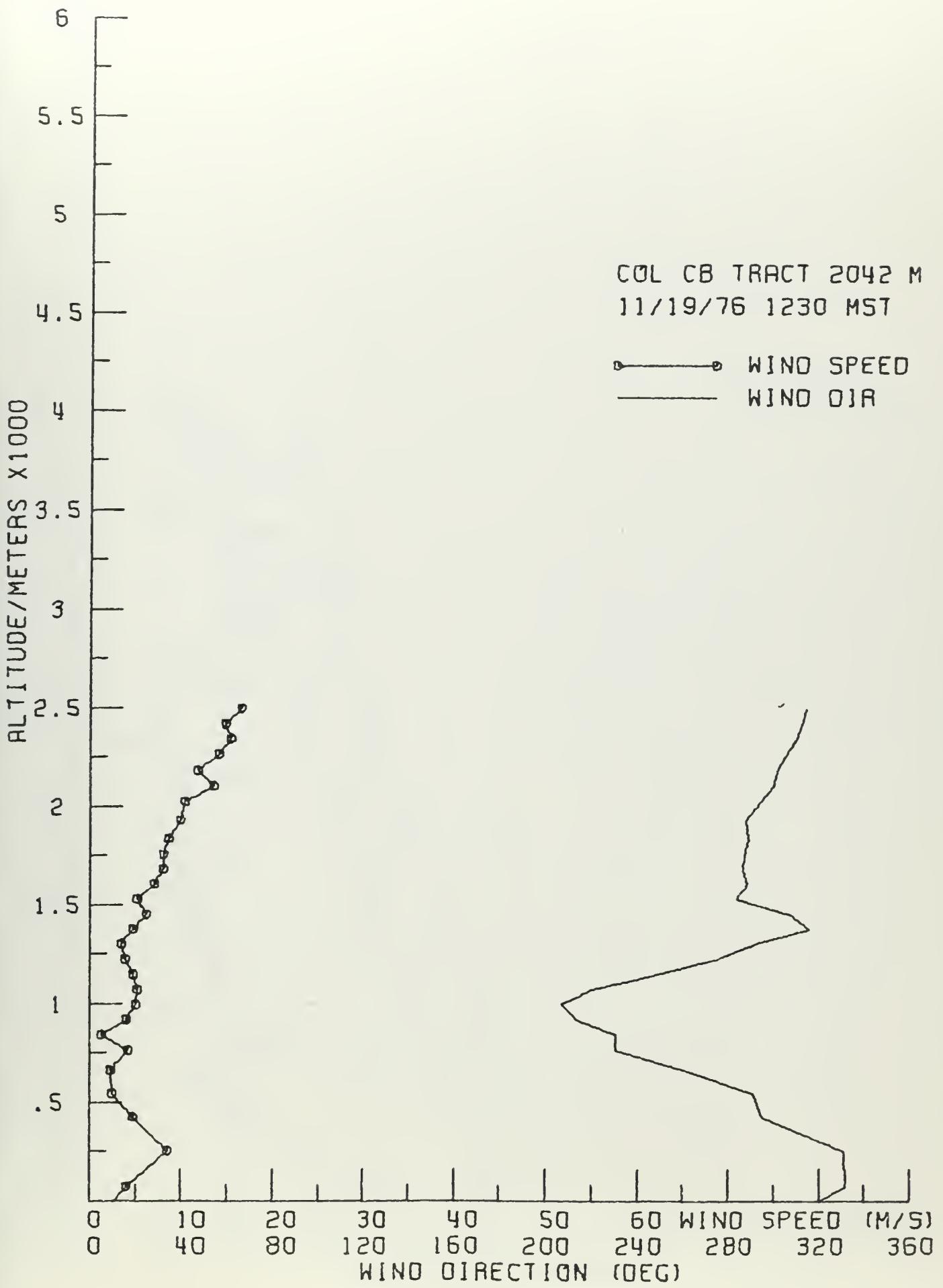


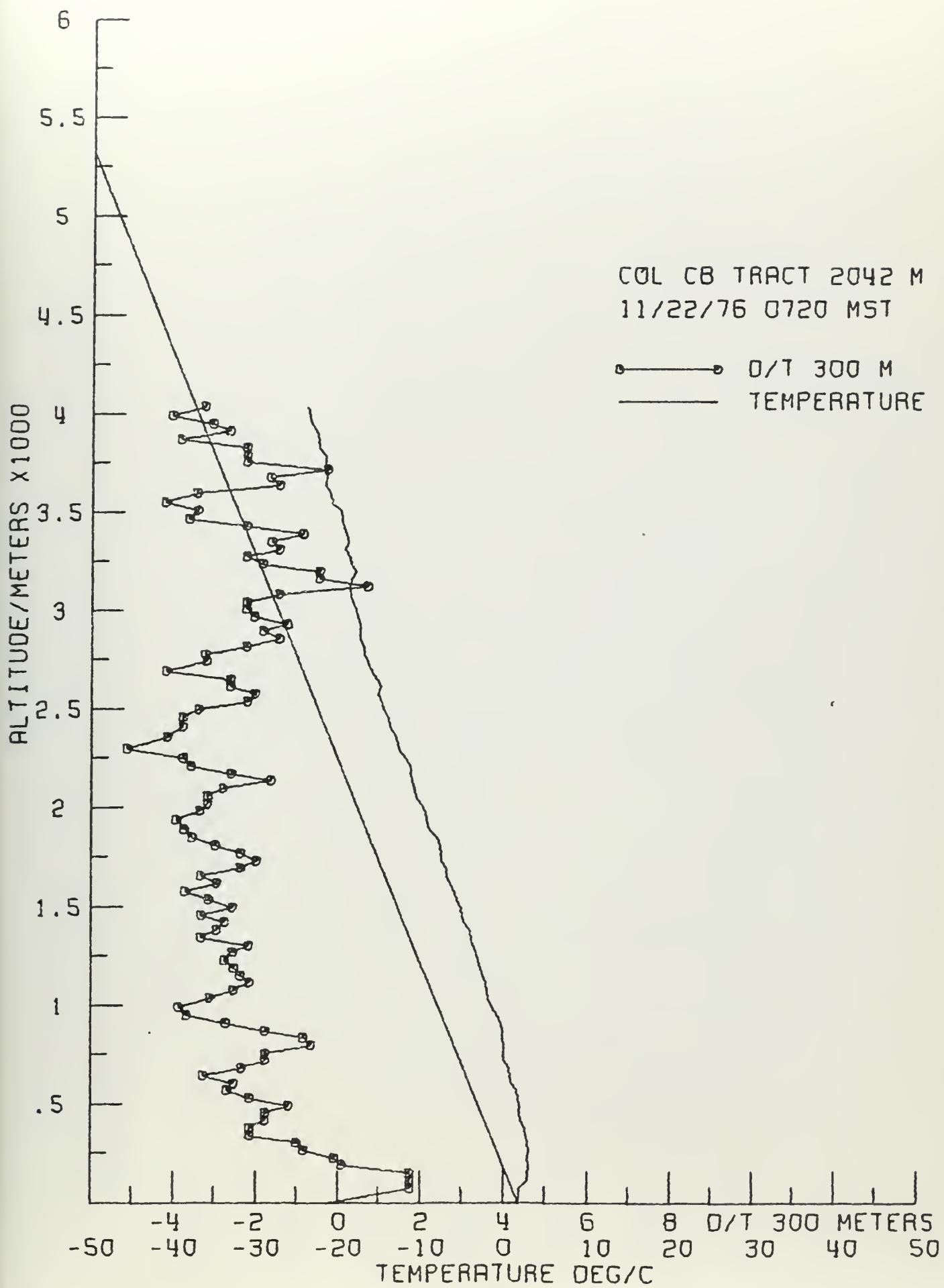


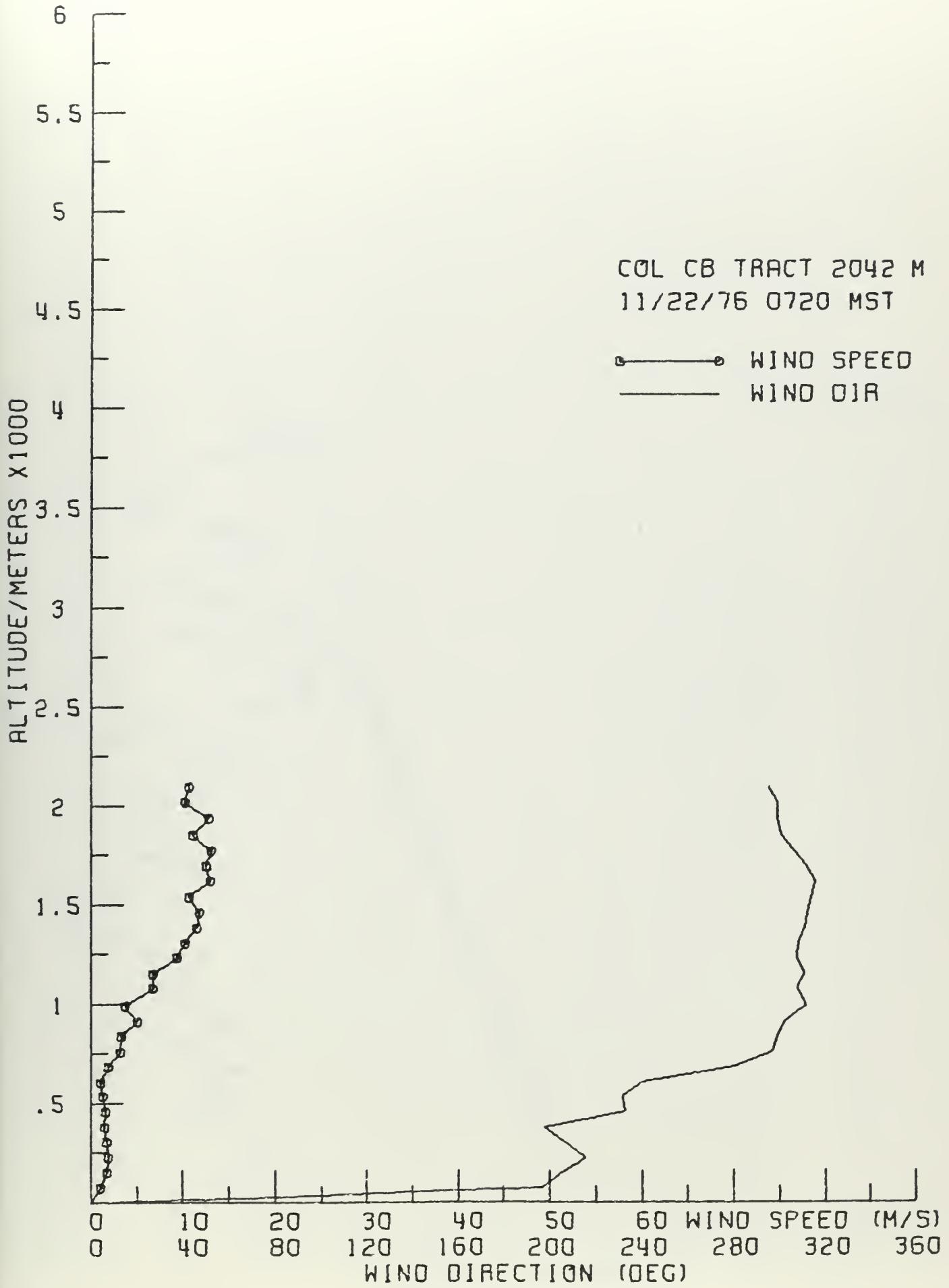


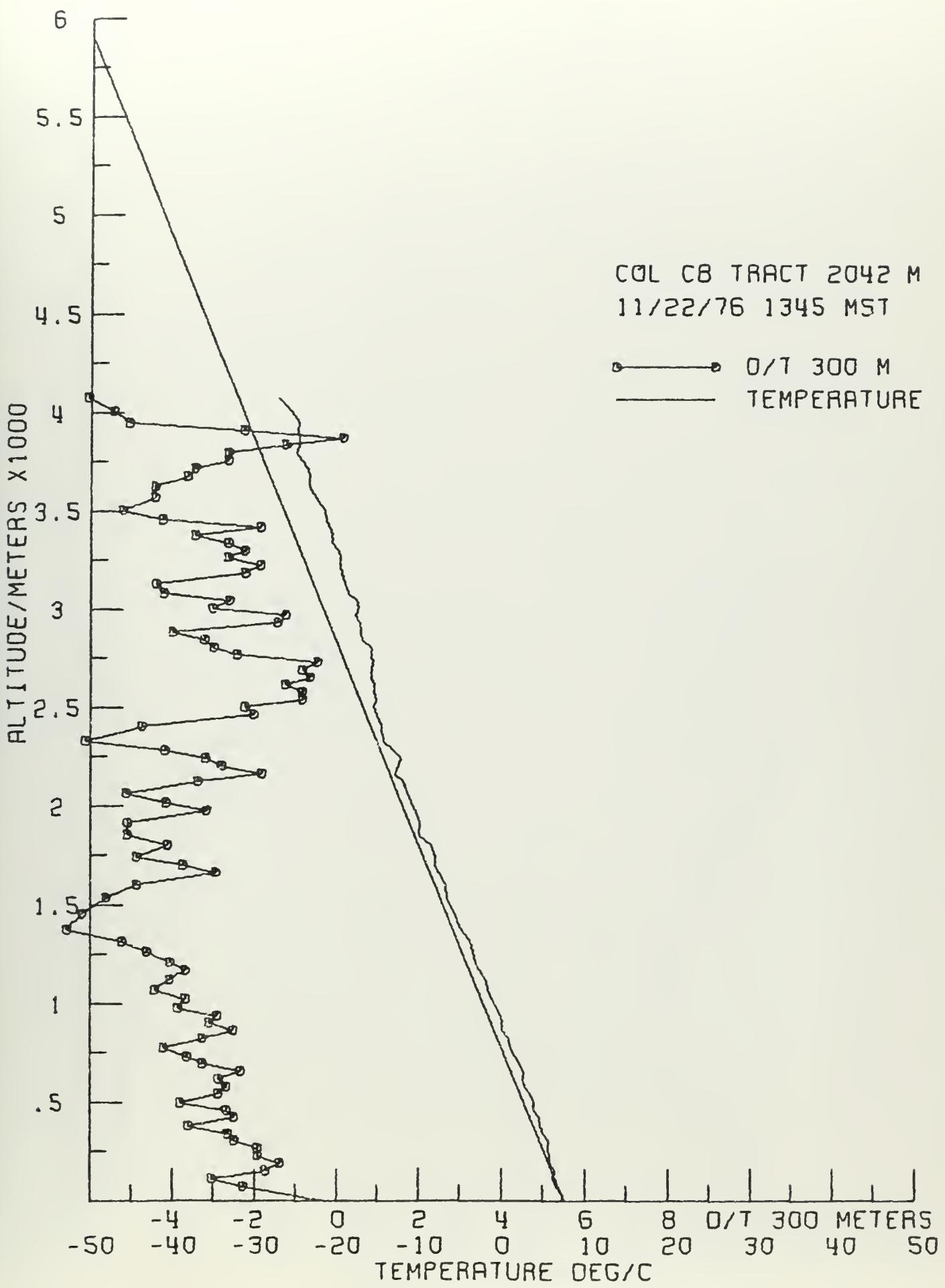


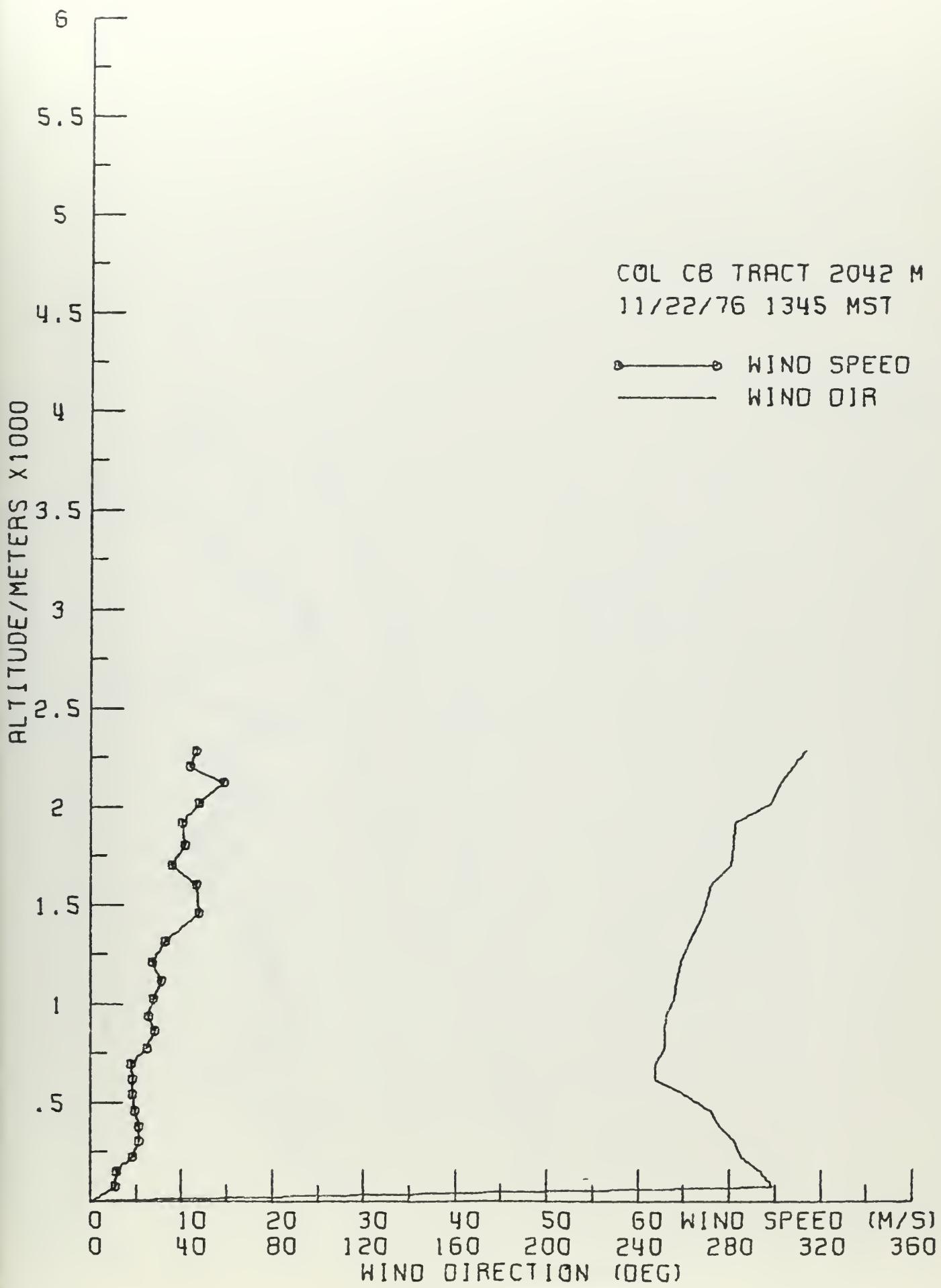


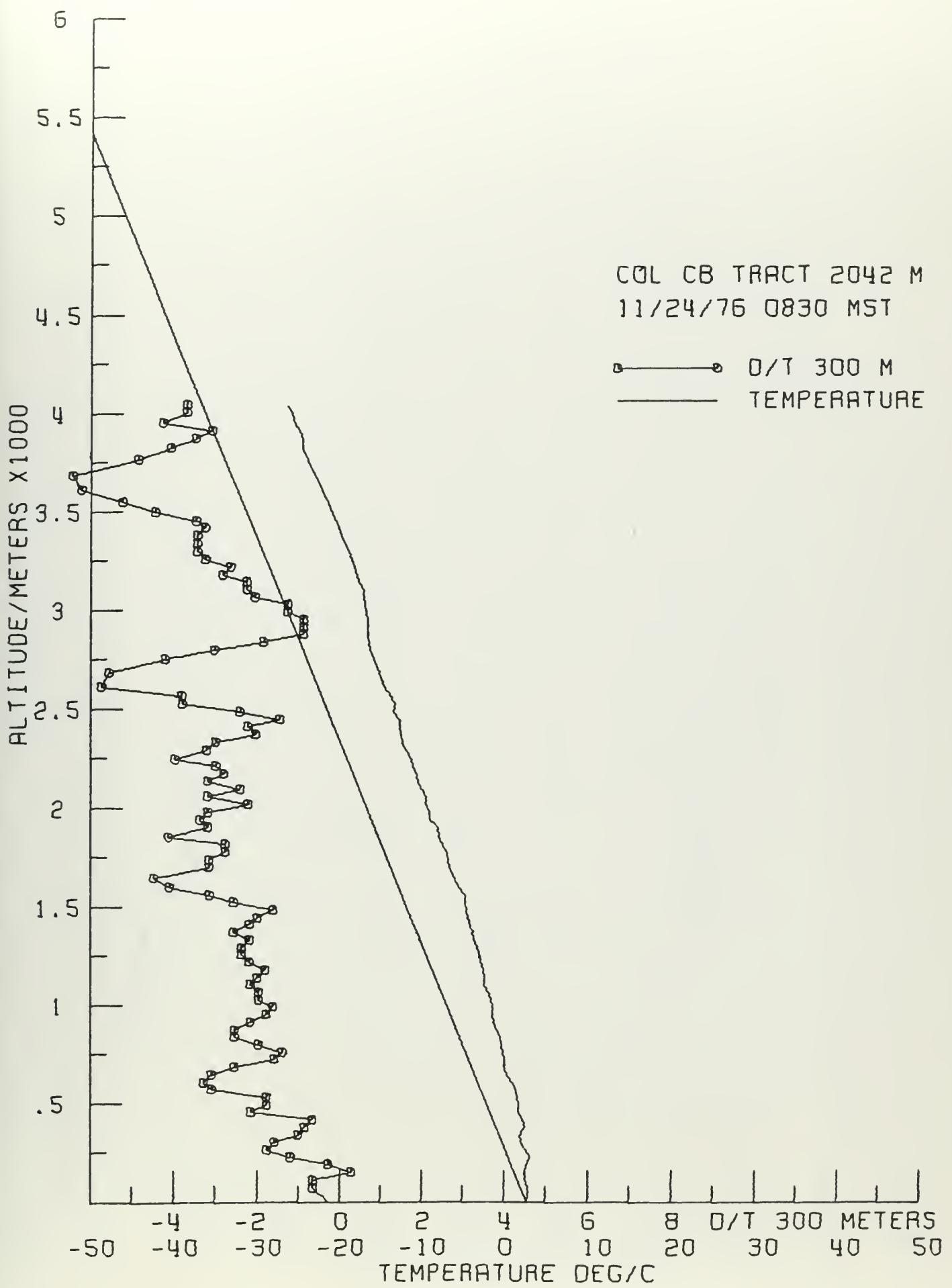


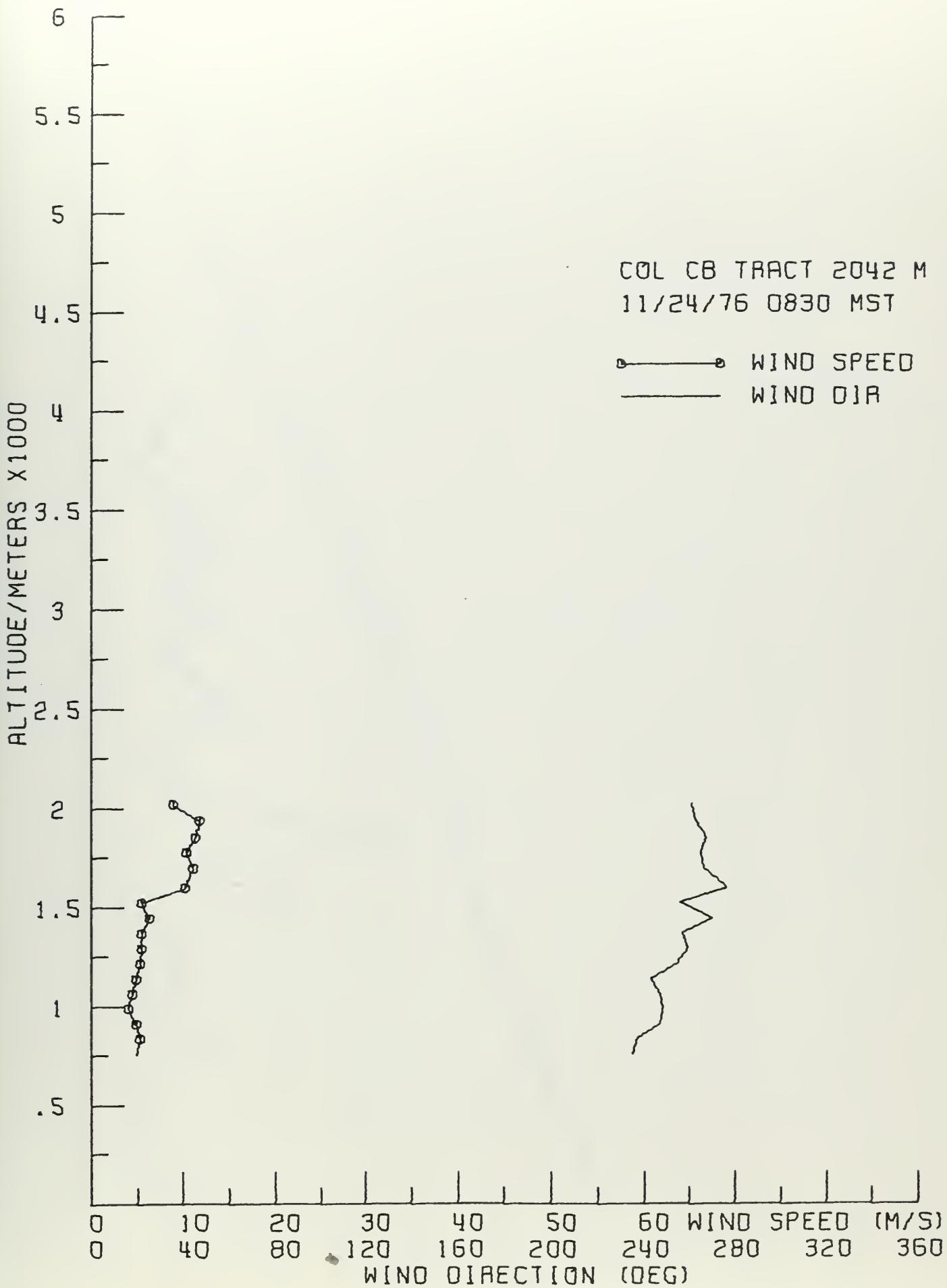


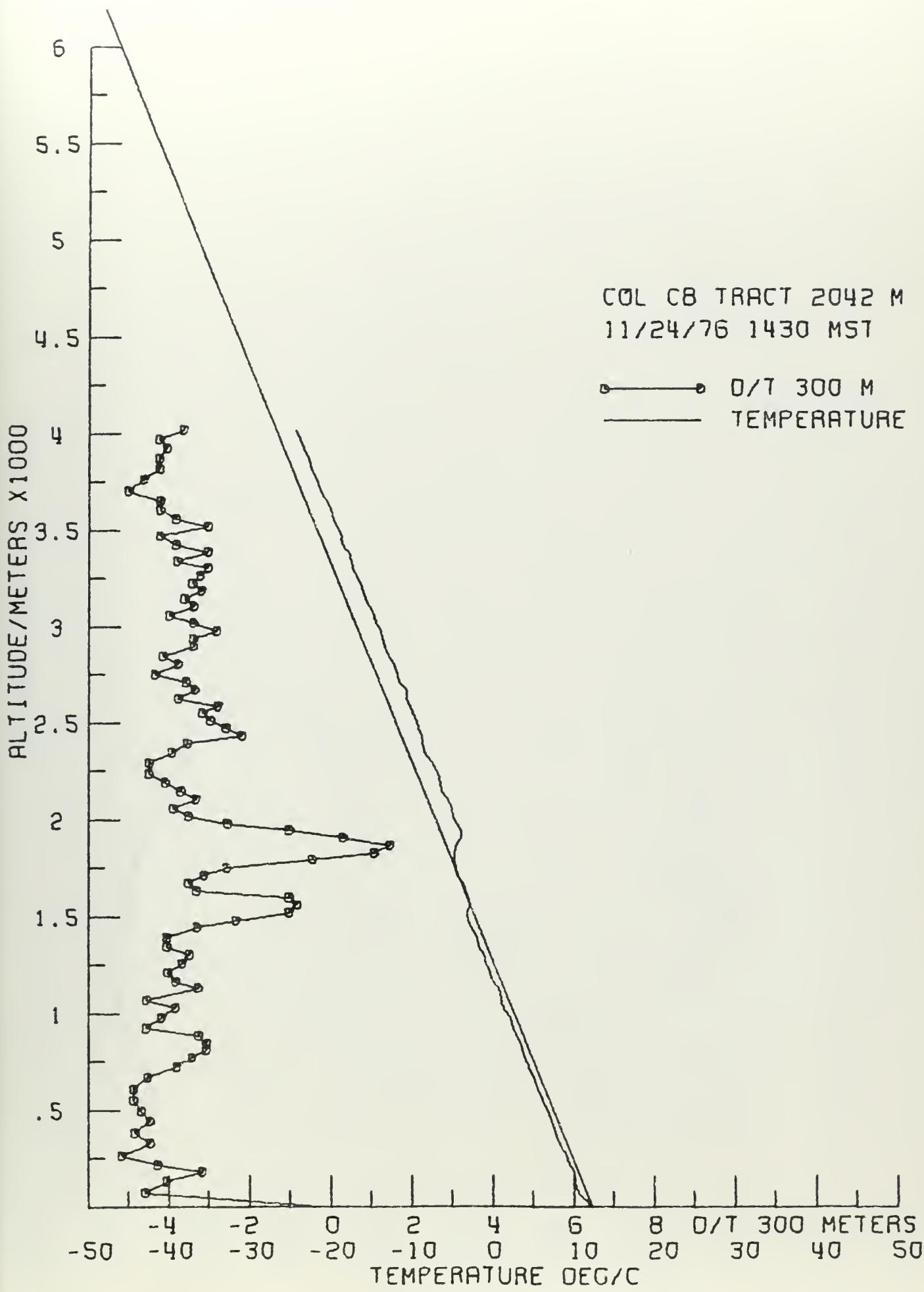


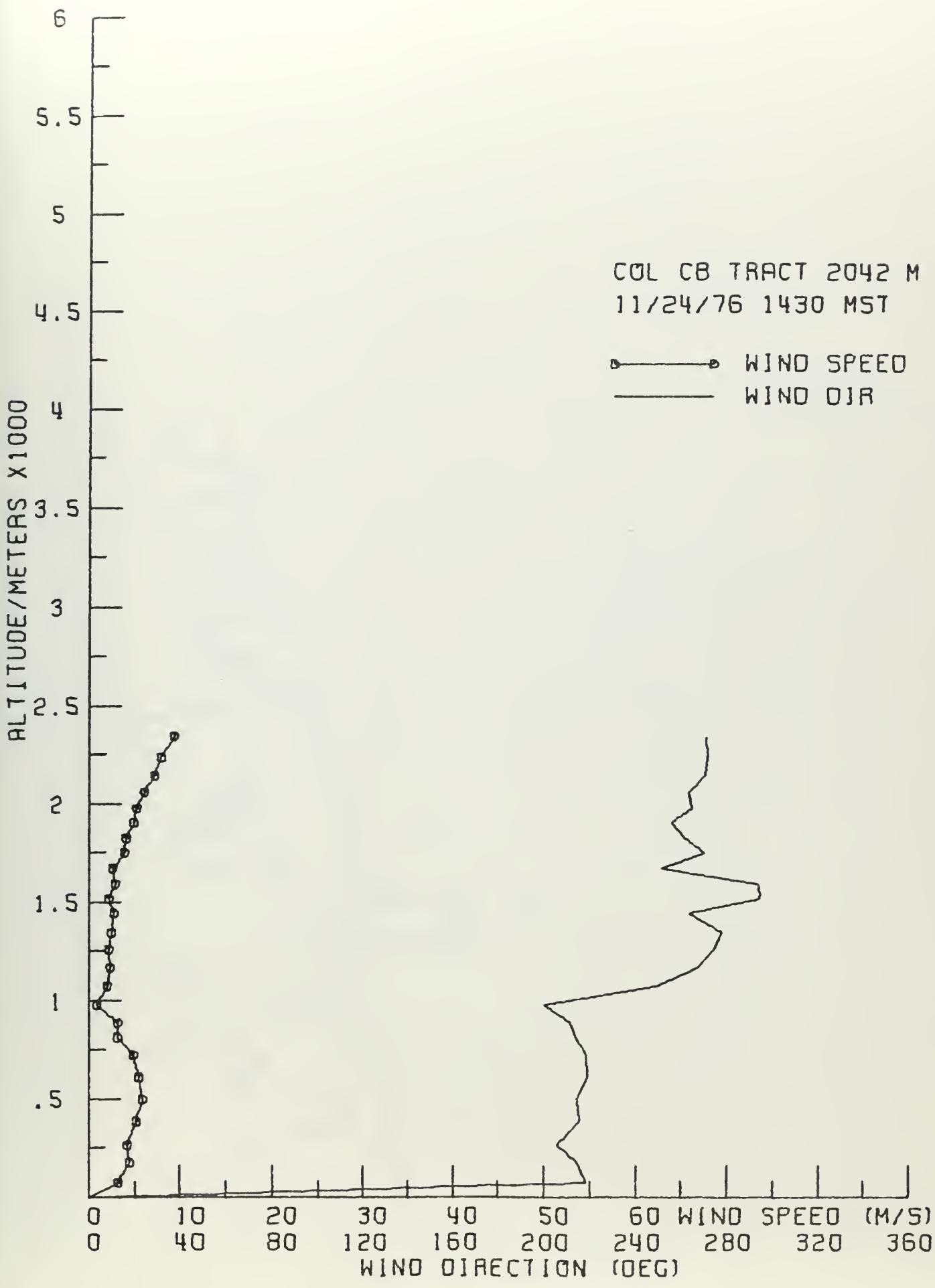


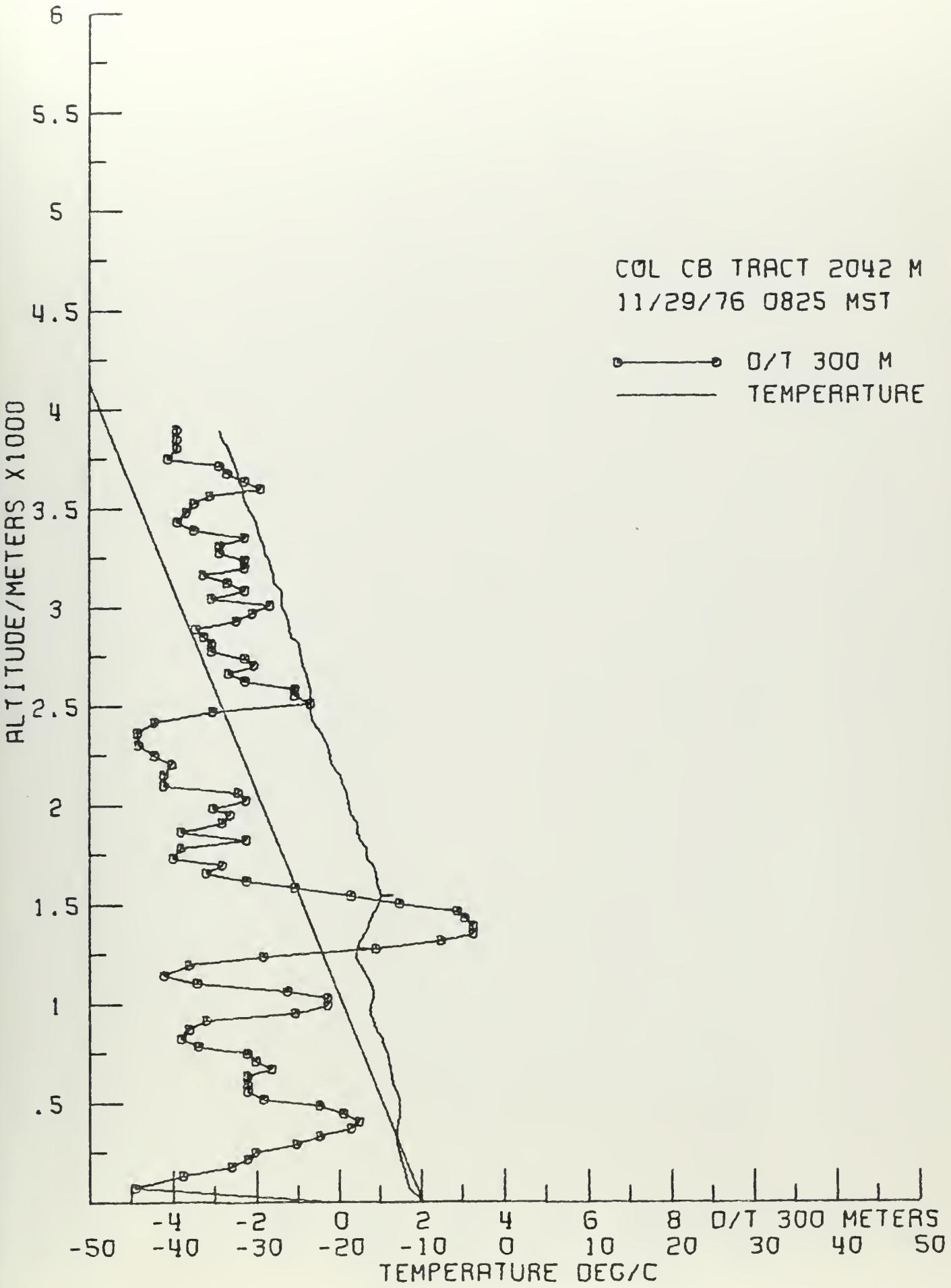


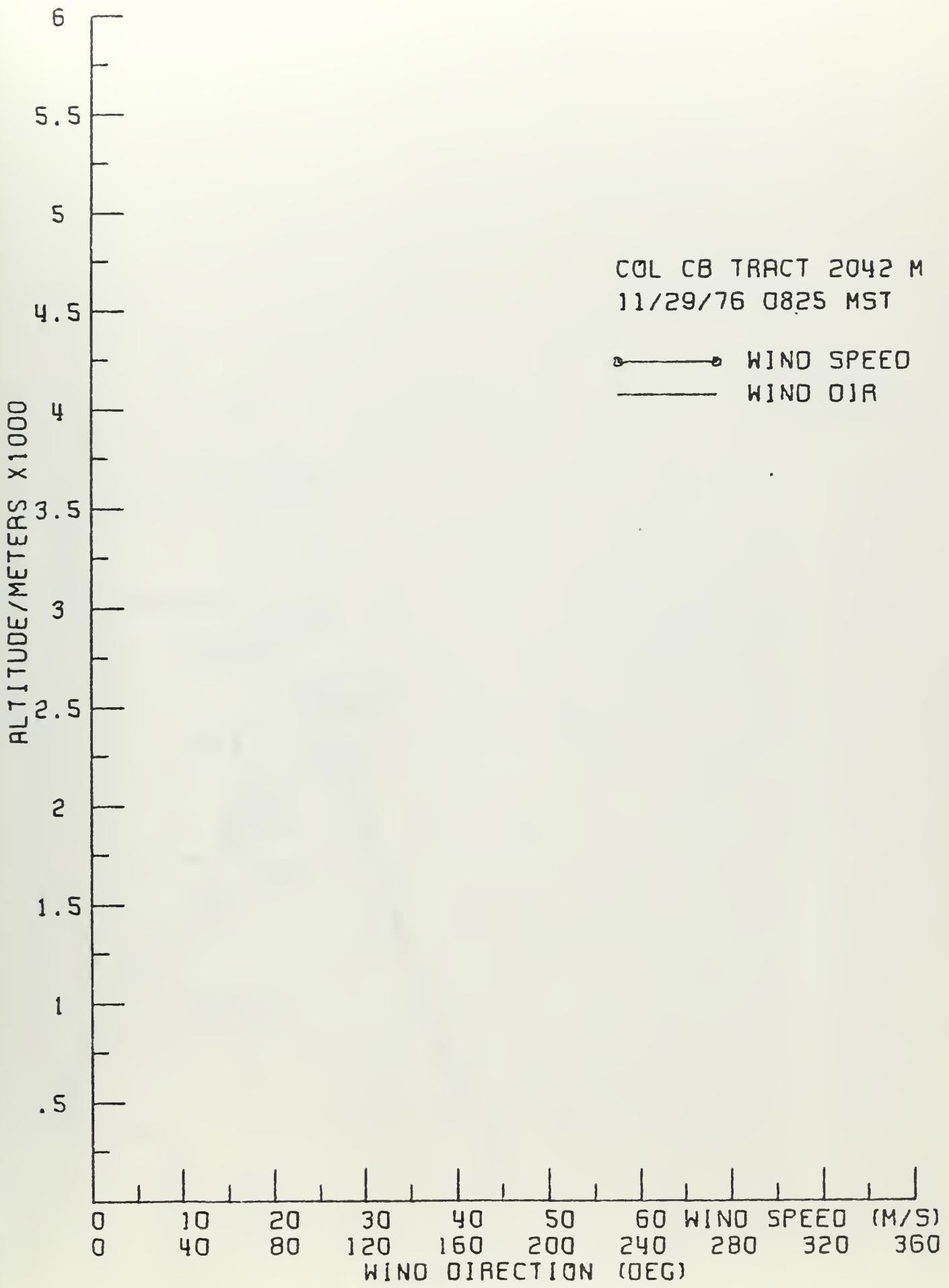


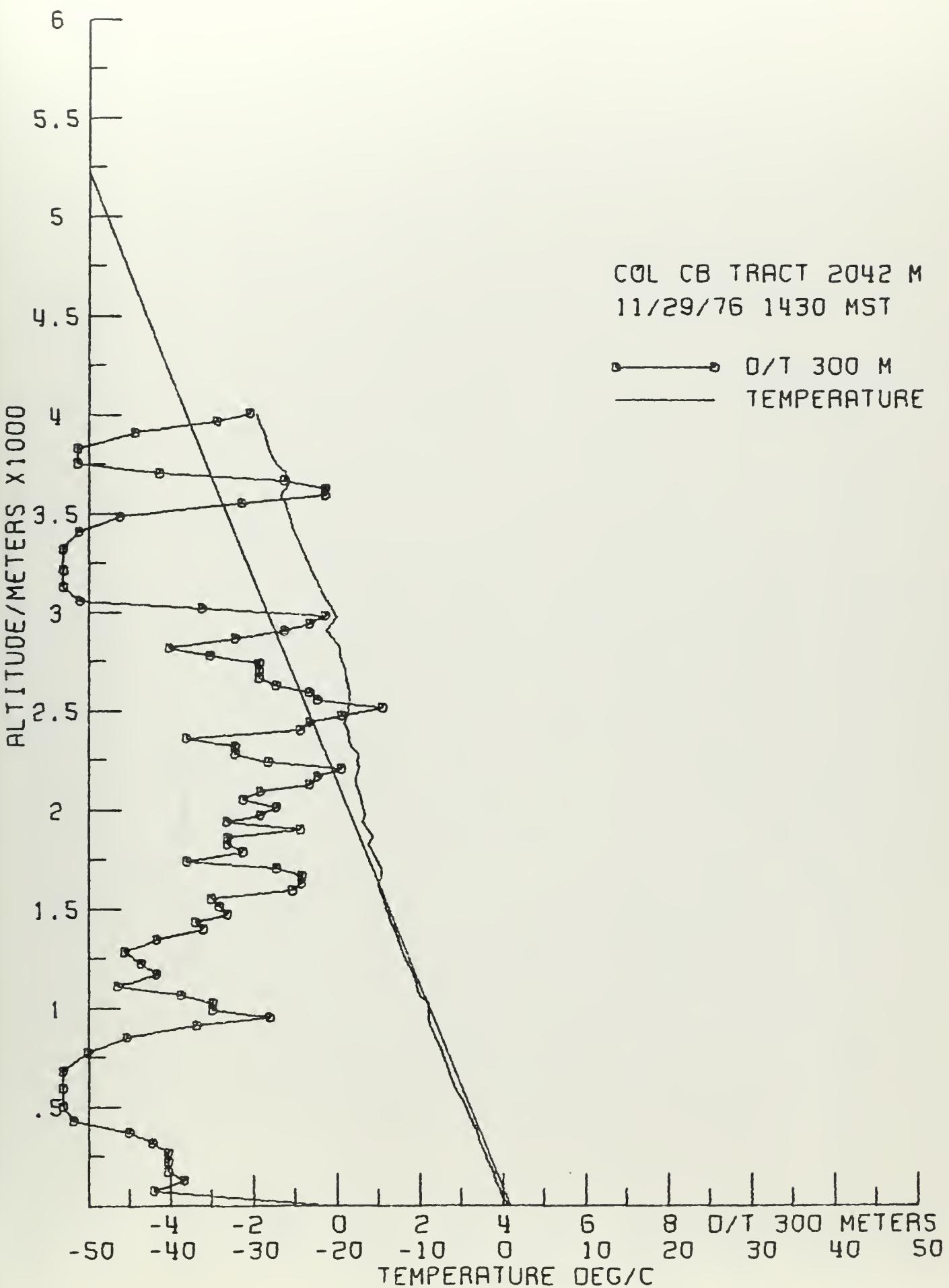


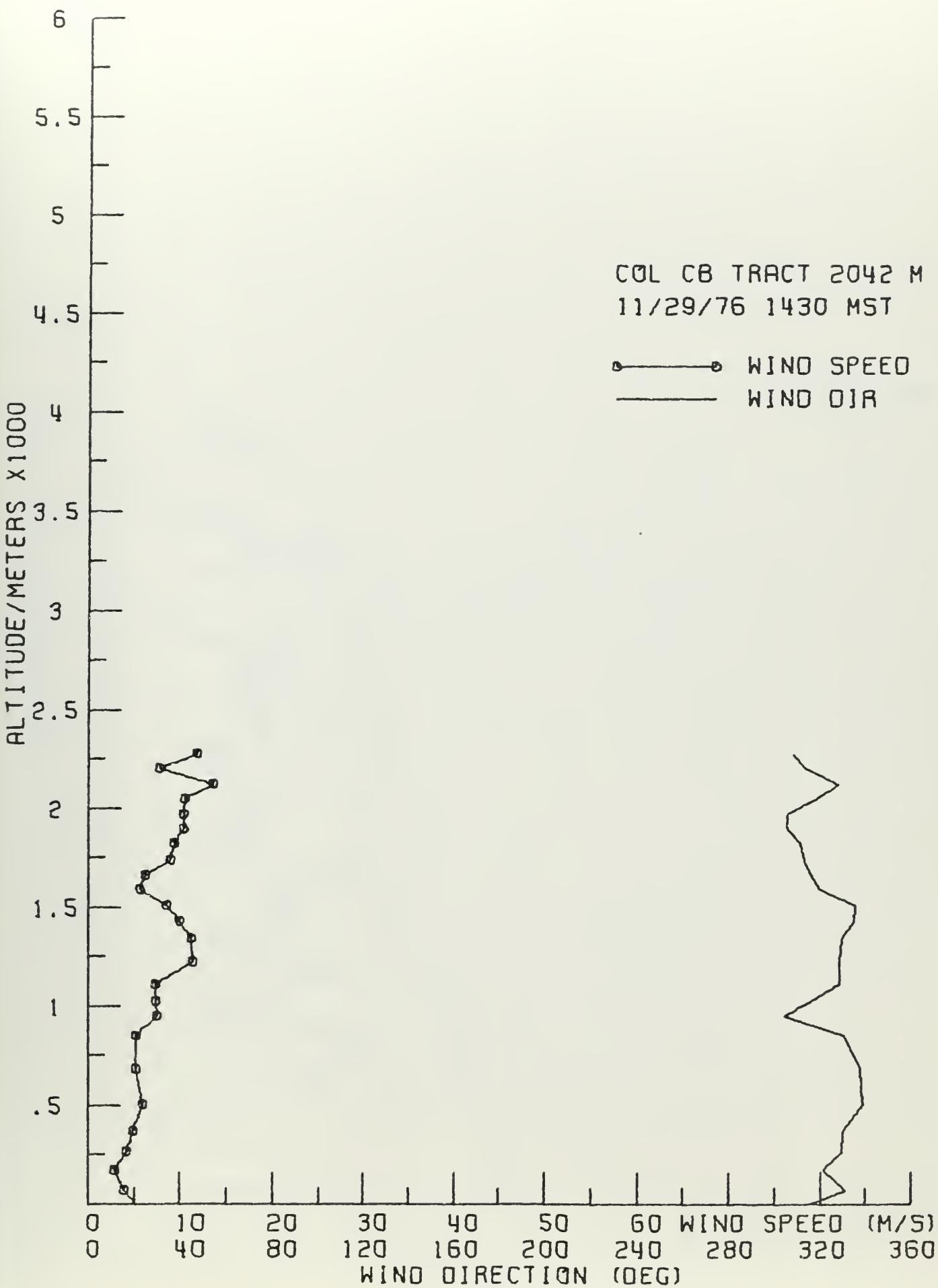


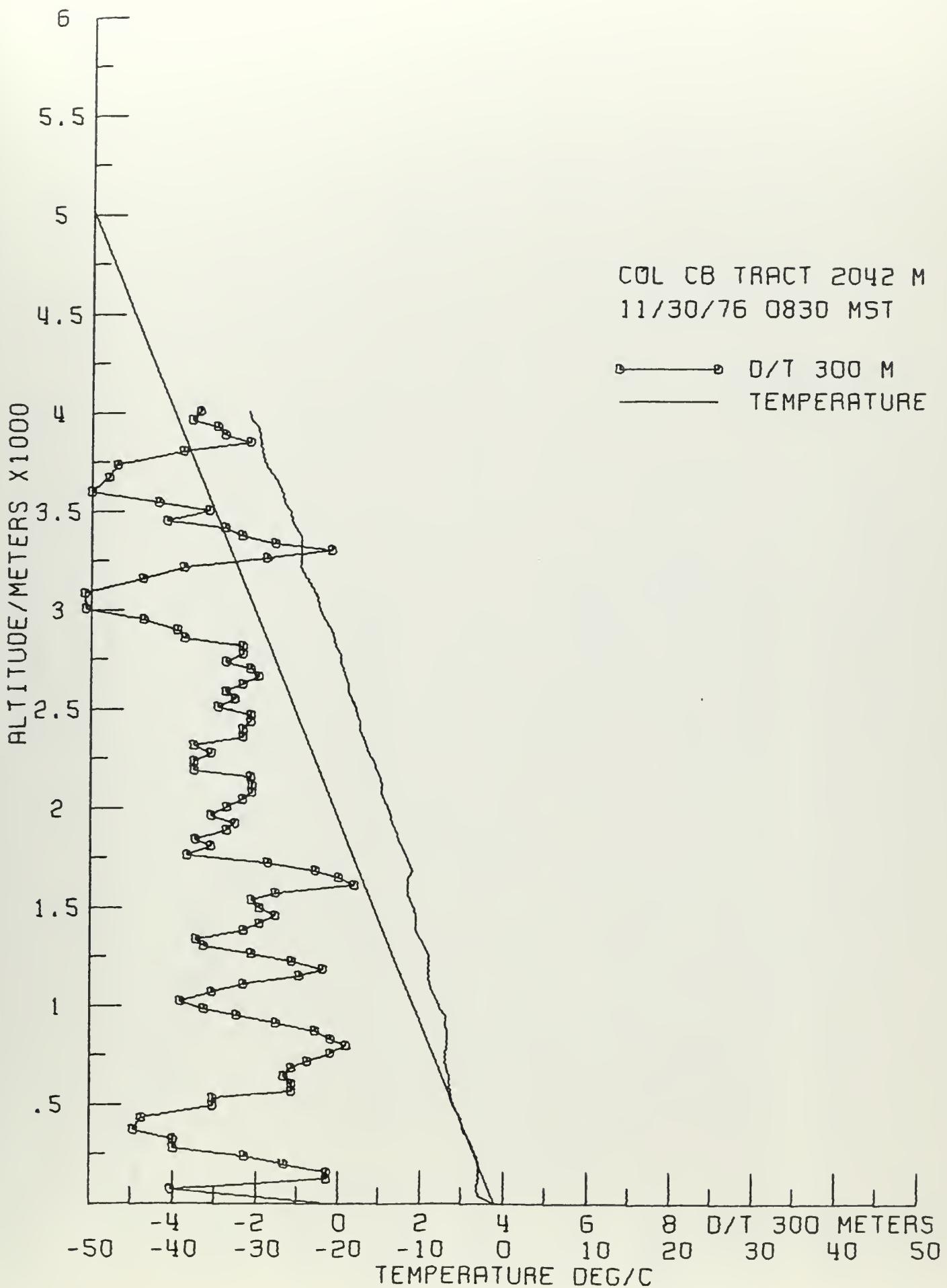


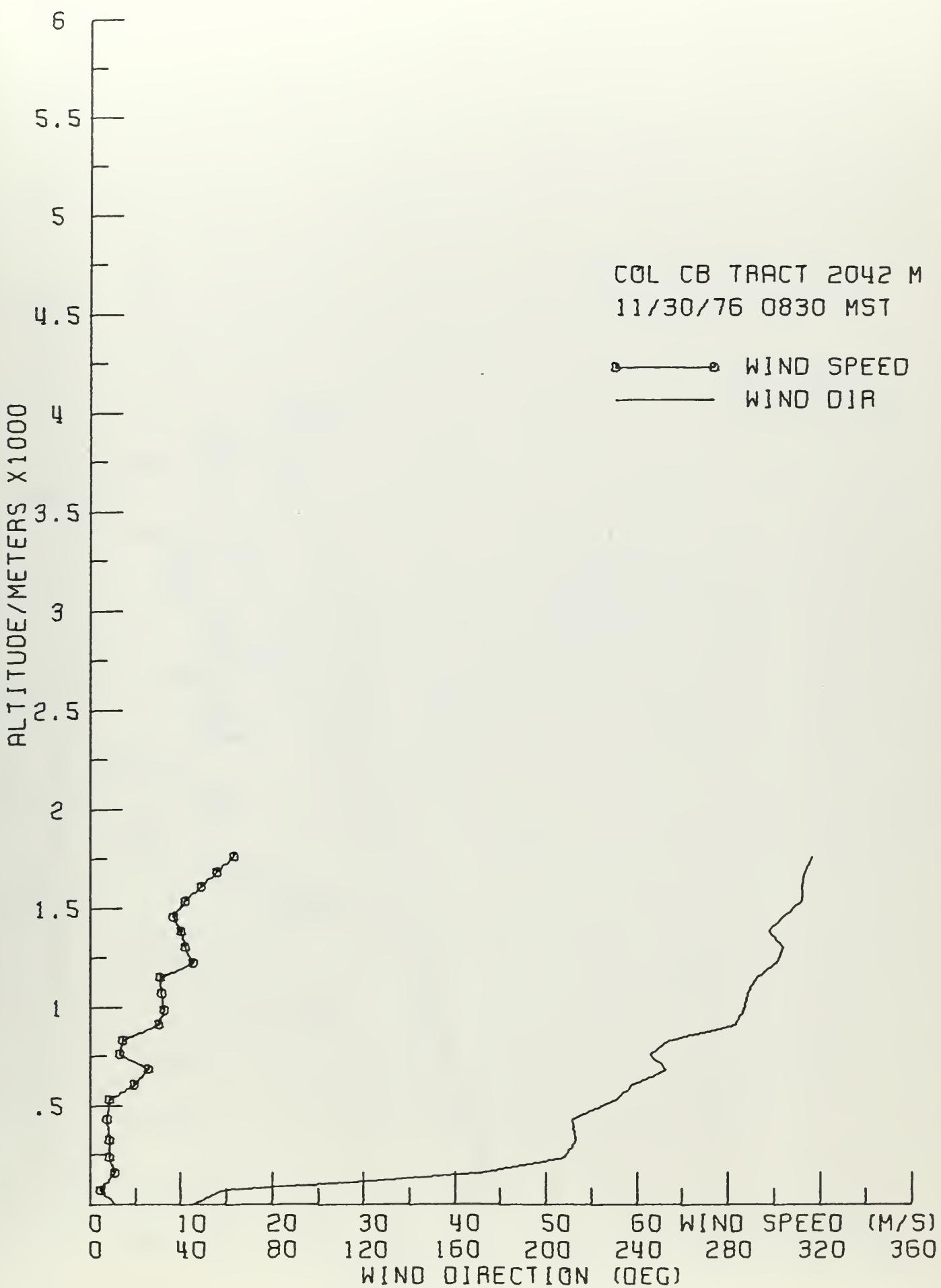


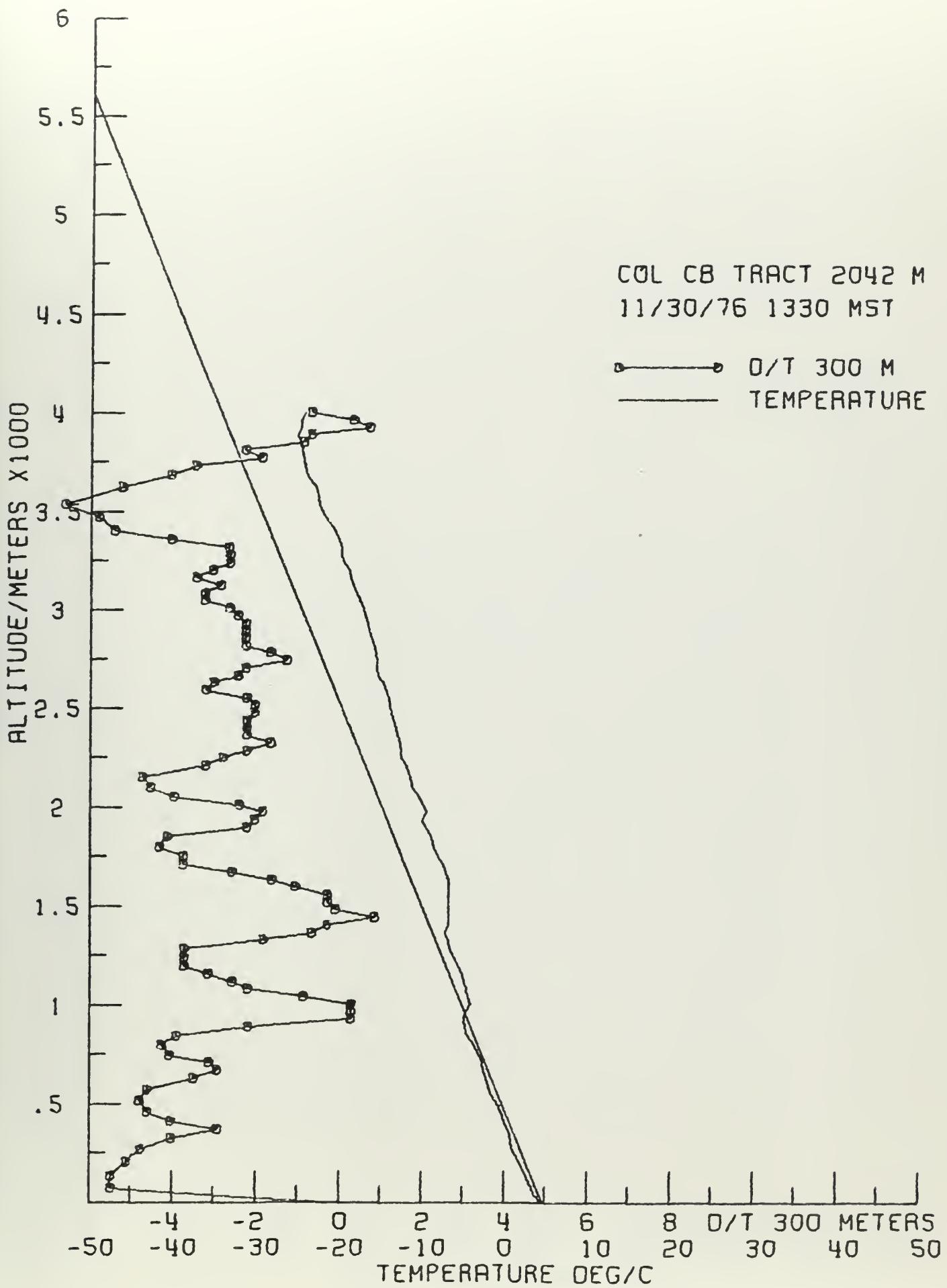


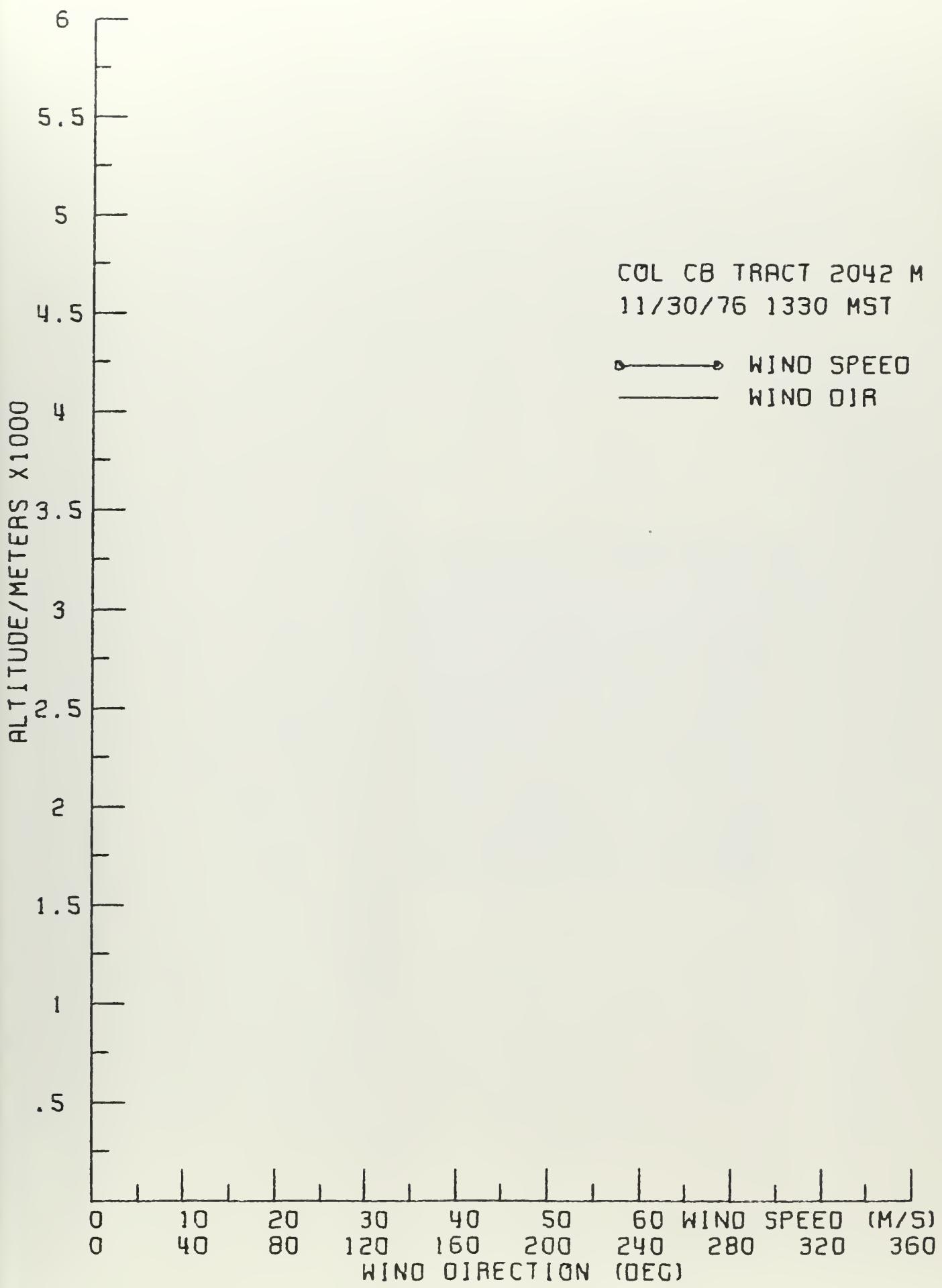












Form 1279-3
(June 1984)

BORROWER

THOMAS M. COOK
MORTGAGE PROGRESS
FOR THE P

DATE LOANED	BORROWER
USDI - BLM	

RECEIVED.

FEB 28 1977
OFFICE OF
AREA OIL MILE SUPERVISOR
U.S. G.S.